An Address

ON

RECRUDESCENCE OF PLAGUE IN THE EAST AND ITS RELATIONS TO EUROPE.

Delivered on August 31st, 1899, at the Eighteenth Congress of the Sanitary Institute held at Southampton,

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GENTLEMEN,—With plague in Egypt, on the shores of the Persian Gulf, and now in Portugal, a discussion on the possibility of its further extension will not be out of place at a Congress of the Sanitary Institute. The commonly received view that advancing civilisation caused the disappearance of plague in Europe and will accordingly prevent a recurrence of plague epidemics is not supported by historical facts. These show that plague at the end of the seventeenth century disappeared from the greater part of Western Europe in the course of 10 years and completely in 30 years, whilst in the middle of the nineteenth century it even more suddenly disappeared from its old haunts in South-Eastern Europe, the Levantine countries, and Egypt, taking only five years, from 1839 to 1844. No special advance of civilisation characterised these epochs so exceptional in regard to the retrocession of plague. The absence of plague even for a long period is no absolute proof of the immunity of the locality. The city of Bombay was free from plague for nearly two centuries and yet it would be impossible to state that the city taken as a whole is less protected now by sanitation than it was during those two centuries or that the people and its Government are in a less civilised state.

HISTORY OF THE PROGRESS OF THE PRESENT PLAGUE.

Five years ago when plague broke out in Hong-Kong Japan was the only country which owing to its proximity to the centre of the epidemic was interested in the outbreak, and it showed that interest in an active manner by sending a scientific commission to Hong-Kong to study the nature of the disease The result of the work of the mission was the important discovery by Kitasato of the bacillus or causal agent of plague, which places us in a much more advantageous position of defence against this disease than that of our predecessors. From Hong-Kong the disease spread through Southern China, little note of its extension being made. Two years later it appeared in Bombay and then the expansive character of the epidemic began to impress itself on the civilised world. In two years it had travelled 3000 miles westward. In India in the course of six months the epidemic assumed most threatening proportions, the general mortality rising in Bombay city to over 1600 a week and important centres in the Presidency becoming infected. Panic, unreasoning resistance to regulations, and flight from the city followed. The infection became still more widely diffused and gradually spread into other Presidencies. The disease once having gained a footing in India continues not merely to spread but also to reappear annually in the infected centres, declining generally during the intense heat and rains and recrudescing in the cooler seasons. The rise and fall is not always regulated by the seasons. For example, a few weeks ago Poona was in the throes of her third epidemic, over 150 of her inhabitants dying per day, which in a town of such small dimensions is an enormous mortality, as may be gathered from the statement that if a similar mortality prevailed in London the metropolis would lose over 10,000 persons a day. The mortality in Poona is all the more serious, as I can state from a personal inspection of the town and of the interior of the houses there that if inefficient drainage be excepted which allows of water-logging of the soil it is in no worse a condition as regards sanitation and overcrowding than hundreds of towns of a similar size in Europe and is certainly in a much better sanitary condition than many.

Since its advent the plague has caused in India over a quarter of a million deaths. The annual reappearance which is a distinguishing feature of the plague in India is also a conspicuous quality of the plague in Hong-Kong, and only recently over 100 deaths a week were recorded in the colony.

The European Governments being alarmed at the outbreak in Bombay the Venice Conference was called to formulate rules and regulations for commerce and pilgrim traffic having for their object the prevention of the importation of plague more particularly into Egypt and Europe as well as into other countries east of the Suez Canal. The rules and regulations have now been in force some two years and during that time, notwithstanding a most rigid adherence on the part of all concerned to the recommendations of the Convention, plague has reached the Persian Gulf, Penang, the Mauritius, the French island of Réunion, Madagascar, Jedda, Egypt, and, if rumour is correct, the Gold Coast of the French possessions in West Africa, and now Portugal, and this extension has happened though the rules were formulated according to the most advanced knowledge on the subject and by the most eminent representatives of the Powers.

The reappearance of plague in Egypt after an absence of 50 years with its extension to Portugal is a matter of profound interest, because it indicates that this plague from China partakes rather of the nature of a pandemic than an epidemic and possesses that which other plague epidemics for nearly the past 200 years have lacked—viz., the quality of diffusiveness which defies the precautions hitherto employed against its progress. This is a feature which contrasts strongly with the spontaneous self-limitation of most of the plague epidemics of the eighteenth and nineteenth centuries.

THE COMMERCIAL CONDITIONS IN THE WEST ARE FAVOURABLE TO DIFFUSION.

The intimate commercial relations between the countries of the Mediterranean basin are very favourable to the diffusion of plague. It is sometimes stated that there is more danger to Europe from the land route from Bushire which follows the course of the caravans than from the sea route from Egypt, but this opinion appears to be based on an insufficient consideration of the intimate commercial relations which now exist between Egypt and the countries of the Mediterranean. When it was a question as to the possibility of plague spreading from India westwards the condition of the sea traffic between India and Europe rendered it less likely that the disease would spread by sea than by land. The native traders of India and the population of India affected by plague have no direct communication with Egypt or Europe by sea. Hindus are forbidden by the rules of caste to make such a voyage and Mahomedans come only by sea as far as the Hedjaz for purposes of pilgrimage. The commercial intercourse between India and Europe is maintained by Europeans who belong to a superior class and who have hitherto enjoyed an exceptional immunity from plague. As regards the native crews that are often employed distance and medical inspection exclude any slight danger that might be attached to them. Three cases of plague were imported into London in 1896, but that was before it was known that plague prevailed to any great extent in India. The danger to Egypt of infection by plague has not been in its commercial relations with India, but in its religious pilgrimages which bring its pilgrims in the Hedjaz into very close relationship with Mahomedans from infected centres. But now that plague has arrived in Egypt a goal has been reached which is favourable to its further extension because the conditions of sea traffic between Egypt and Europe are very different from those between India and Europe. There is constant communication kept up by fishermen, traders, and travellers and extending to all classes and including those likely to be affected with the disease. Close proximity also plays an important part.

In the case of a ship coming from India distance gives time for the development of illness on board and allows of the adoption of precautionary measures should it turn out to be plague, but a ship coming from Egypt arrives at its destination in the Mediterranean basin before any signs of illness are manifested. Surveillance on board ship on a voyage of over 10 days is likely to be superior to surveillance on land, especially when the person coming from an infected country has to pass through several countries. It will be seen, therefore, that the plague in Egypt comes under a set of new conditions which are far from being unfavourable to the Westward progress of the disease; nor is this a matter of mere speculation, for it will be remembered that the cholera in England in 1866 and the cholera in Spain in 1884-85 followed its prevalence in Egypt.

As a matter of fact plague has within the last few weeks appeared in Lisbon and Oporto. Portugal being a maritime country and in close connexion with Spain the facilities for extension are considerable and the proximity of this new centre adds to the danger. From England Portugal is not more than two or three days' sail, and as there is communication which is not direct with the larger ports where control can be exercised but with a number of smaller seaports where constant supervision is rendered difficult the risks to this country are enhanced. The Local Government Board are fully alive to this aspect of the question, as can be seen from their special orders on the subject.

THE BASIS OF PREVENTIVE MEASURES.

Having considered the likelihood of the disease spreading I shall now turn to the precautions against the disease.

Preventive measures must be based on our knowledge of the disease. Fortunately, this has been considerably added to since the plague first broke out in China. Two discoveries of the first magnitude have been made—the one by Kitasato, showing that the bacillus is the cause of the disease; the other by Haffkine, proving that from this bacillus a prophylactic may be prepared which has strong protective powers. These discoveries, combined with the fact that plague is a disease which only slowly gains a firm footing in a locality, render the checking or mitigation of an outbreak much more hopeful and certain than before. The recognition of the bacillus permitted observations to be made as to the manner in which the microbe leaves the body. The bacillus has been found in the excreta, in the urine, and in the sputum. There is a specially dangerous and infective form of the plague termed the "pneumonic" in which the sputum teems with the bacillus. It is therefore the sputum and excretory discharges to which special attention has to be paid. It is by these that the clothes, bedding, and surroundings are likely to become infected.

Precise information of this kind is a considerable advance on that previously known, though it must be admitted that the information does not extend to the life-history of the bacillus in nature or to the exact methods by which the human body becomes infected. All that can be said at present is that water as a vehicle for the multiplication and spread of the disease plays a very unimportant part. Unlike cholera, plague on reaching a new locality does not break out suddenly into a large epidemic but extends slowly for some considerable time. A month and, according to Captain Grayfoot, I.M.S., more than six months have frequently elapsed between an imported case and the first indigenous death. The slow progress of the plague in an infected locality, its apparent inability to spread by water, the mortality which usually occurs among rats previously to a general outbreak, and the fact that the bacillus of the rat plague is identical with the plague bacillus in man have led some observers to think that the extra-corporeal life of the microbe is in the soil, which is an opinion conforming to the Chinese view that the poison of plague is in the soil. Experiment has so far not confirmed this opinion but hitherto researches in this direction have not been numerous. A wide gap accordingly exists between what is known and what is necessary to be known to give us control over plague. The danger of extension, as in some other infectious diseases, lies in our ignorance as to the medium and agents by which the bacillus gains access to the body, and if the bacilli are not destroyed immediately they leave the body the necessary dependence on general rather than on special measures of defence is a defect which may be far-reaching in its results. It is a disadvantage which every opportunity should be taken to remove, and for this purpose it seems to me to be of paramount importance that the Governments of those civilised countries which are affected with plague should not be content in merely endeavouring to combat the disease by every known method at their disposal, such as isolation of the sick, evacuation and disinfection of infected houses, &c., but that they should systematically, as a part of the sanitary defence of the country, establish laboratories and special departments for organised research and inquiry into the mode of spread of the disease, for it is only by the adoption of these methods that success is likely to be attained. Fortunately, owing to the researches of Haffkine in another direction, we are in possession of a prophylactic which if extensively employed will lend powerful assistance to the other measures which may be introduced to control the disease. An agent which almost wherever it has been tried is uniformly successful in reducing the mortality amongst the inoculated when compared with the uninoculated to over 80 per cent. and which has reduced the hospital mortality among the inoculated attacked by 50 per cent. is a most valuable weapon of defence which must, if plague continues to increase, come into more and more requisition. That its value is being recognised outside of India may be gathered from the fact that many applications have already been made for quantities of the prophylactic. Among authorities applying may be mentioned the Governments of the Mauritius, Natal, Italy, and Russia, the Crown Agents for the Gold Coast, the Consul-General of Zanzibar, the Governor of Nicosia, Cyprus, and the Chamber of Mines, Johannesberg.

THE PRECAUTIONS AGAINST IMPORTATION.

To the precautions which were devised by the Venice Conference to prevent importation of plague into a healthy country and which are embodied in the Venice Convention I think it is a subject of consideration whether two others might not be added, both depending on exact knowledge obtained and confirmed since the meeting of the Conference. The first is that use should be made of the protective power of Haffkine's prophylactic, and the second is that rats, as they have been proved to suffer from the same plague as human beings and to be agents in its dissemination, should be dealt with at infected ports and on the voyage on ships from infected ports. As regards merchandise, it has always appeared to me that much of the infection is rather connected with the rats which are to be found accidentally associated with grain and other articles of merchandise than with the merchandise itself, and that special precautions should be taken against this mode of extension of the disease. The practical application of Haffkine's prophylactic to the crews of all ships and boats, large and small, coming from infected ports would probably largely reduce the danger of the importation of plague and relieve the anxiety felt at a healthy port when a ship enters having left an infected port a few days previously. Similarly, under certain circumstances and precautions protection might be given to passengers or travellers desirous of crossing the frontiers into a healthy country.

PRECAUTIONS TO PREVENT SPREAD OF THE DISEASE IN AN INFECTED COUNTRY.

In connexion with the checking or stamping out of plague when it breaks out on land the early notification of diseases is of immense advantage, for it allows measures to be early and promptly applied so that the sick can be isolated, the inmates of the house removed and watched, and the house itself disinfected. For large cities the camping-out system available for villages and small places, and which in these instances has proved so useful, is impracticable, especially if a large area is infected; but in both village and town whenever a case of plague occurs not only should the inmates removed from the infected house be inoculated but also the inhabitants of the houses within a certain area. By the latter means a zone of comparatively immune persons would occupy what might otherwise become a dangerous focus of disease.

It is possible with proper organisation to deal with an outbreak of plague much in the same way as with an outbreak of small-pox. Large supplies of Haffkine's prophylactic are necessary in order that every possible contingency may be provided for and the preparation of these supplies, which require time and a skilled organisation, ought not to be left to the last moment. To meet plague the organisation for defence requires to be placed on as complete and in as efficient a state of preparedness in every respect as the army and navy of the country would be in if there was danger of invasion.

The sanitary organisation of England inspires confidence that all will be done which our present knowledge suggests to protect the country against disease. But, as stated previously, that knowledge is very imperfect. In the case of an outbreak of disease such as typhoid fever in this country a scientific investigation is undertaken as to its cause and mode of spread. It is known that typhoid fever is caused frequently by contaminated water. This, however, does not prevent further investigation being made in order to ascertain if any new facts can be discovered with reference to the epidemiology of the disease. Epidemic after epidemic is carefully inquired into. A similar inquiry of even a more searching and extensive nature is certainly and most urgently called for in regard to the plague, which is a disease that this generation is not familiar with. The

importance to this country of observing its behaviour as notified by conditions in Europe is such that study of it in its epidemiological, prophylactic, and curative aspects should be undertaken by Government. To this end it would appear to me advisable that a small Commission of experts—of physicians, epidemiologists, and bacteriologists—should be sent to the Peninsula for that purpose. It is a matter of Imperial concern and admits of no delay. No expense should be spared, for if the matter is considered from no higher standpoint than a financial one experience has shown that plague wherever it has acquired a firm hold disorganises and paralyses trade to such an extent that the money losses are immense. The quarter of a million lives lost in India show the destructiveness of the disease and the importance of making every effort to learn more about plague with the object of its prevention.

Hitherto I have said nothing as regards general sanitation. That attention to this is necessary goes without saying. While preparing to immunise individuals with Haffkine's prophylactic every endeavour should be made to immunise the locality by sanitary measures. But in this connexion it should be borne in mind that excellent water-supplies are of little protection against plague; and as it has been perhaps to the acquisition of pure water-supplies that the attention of sanitarians has of late been chiefly directed while measures for the dryness and purity of soil have taken but a secondary position, it is therefore to the latter branch of sanitation that I would commend that special attention be paid. Localities in which overcrowding, poverty, and filth exist have always been the favourite haunts of plague, and it is on these localities in every country and in every large town that protective efforts should be concentrated by the authorities concerned, in order that if the first line of defence is broken through the plague may not find conditions favourable to its growth and rapid spread. Poverty we have always with us; overcrowding may be lessened, or at least regulated or watched, and filth may be easily removed and the dirty spots cleansed.

MEDITERRANEAN OR MALTA FEVER,

WITH SPECIAL REFERENCE TO THE SPECIFIC AGGLUTINATING SUBSTANCES WHICH MAKE THEIR APPEARANCE IN THE BLOOD IN THE COURSE OF THAT DISEASE.

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MEDITERRANEAN fever is a disease too seldom recognised. It is often disguised under such names as simple continued fever, sweating typhoid,[1] &c., accounts of which still unfortunately find a place in current medical literature. Clinically, the main features of Malta fever are briefly stated as follows: pyrexia of a more or less chronic type, accompanied by constipation and copious perspiration; relapses are frequent, and convalescence is often retarded by neuralgias, joint-pains, and orchitis. This fever is the cause of much sickness among the British troops stationed at Malta and Gibraltar. Many men in the convalescent stage are invalided to England and come under treatment in the Royal Victoria Hospital, Netley. Among these men relapses are not unfrequent after their arrival and thus a wide field for study of the disease is afforded.

History of the bacteriology of Malta fever.—In 1887 Bruce[2] isolated a micro-organism in pure culture from the spleens of nine fatal cases and from blood drawn from the spleen during life in two instances. This organism he named the micrococcus melitensis. He succeeded in infecting monkeys by subcutaneous injection of small quantities of the pure culture of this coccus. In these animals it gave rise to a continuous fever, not unlike that in man, and usually caused death after a variable time. In the monkeys which died from this infection he found in pure culture in the spleen the same bacterium as he had inoculated. Hughes[3] has corroborated these observations of Bruce. He has isolated the micrococcus melitensis from the spleens of 14 men who succumbed to this disease. Further, he has infected monkeys with the cultures of the organism and, like Bruce, afterwards recovered the micro-organism from the spleens of the animals which died. Gipps[4] has also obtained the same micrococcus in two fatal cases. In this country we have grown the microbe from the blood and spleens of the only two fatal cases which have come under our notice.[5] The observations of the disease in infected monkeys, as described by Bruce and Hughes, have been amply confirmed in this laboratory by a long series of experiments undertaken some two years ago by Professor Wright and Major D. Semple with an organism sent from Malta by Hughes. We also have infected monkeys with the cultures obtained from the two fatal cases mentioned above. As the details of these experiments coincide in almost every particular with the descriptions previously given by Bruce it is unnecessary to enter further into them. Durham[6] has shown that the infection can be conveyed to rabbits and guinea-pigs (animals regarded by Bruce as immune to the disease) by means of intra-cerebral and intra-peritoneal inoculation. These observations have also been confirmed in this laboratory by Professor Wright and Major D. Semple. Various attempts have been made by us to isolate the organism from the urine during the course of the fever in man. These have in all cases been unsuccessful. The plates either remained sterile or were overgrown by more quickly growing bacteria. No bacteriologist has described the micrococcus melitensis as having been isolated in any other disease.

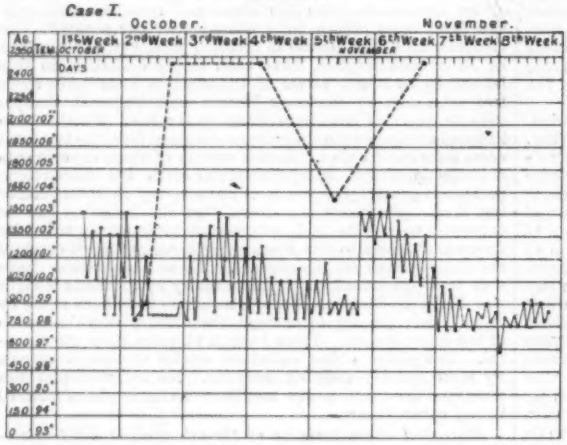
Biological characteristics of the micrococcus melitensis.—These have been fully described by Bruce,[7] Hughes,[8] and Durham.[9] A brief *résumé* of their and our own observations will therefore suffice. The micrococcus melitensis is a small coccus or cocco-bacillus about 0·33 μ in diameter, the bacillary form being more pronounced when grown on gelatin. We have not been able to satisfy ourselves as to the presence of any motility other than Brownian movement. Gordon,[10] however, figures it as possessing usually a single and sometimes three or four short flagella. Neither Durham[11] nor the workers in this laboratory have been able to confirm this observation. It stains readily with all the basic aniline dyes, while it does not retain its stain by the Gram-Weigert method. The growth of this microbe on all media is characterised by its slowness. On agar (at 37° C.) no colonies are visible to the naked eye for at least two days. In cultures made directly from the spleen or blood in fatal cases the agar appears sterile to the unaided eye for from four to six days. The colonies, when developed, are small, transparent, and dew-like, and are often limited to the lower end of the tube. Broth (at 37° C.) becomes turbid, the turbidity appearing on the second or third day. After a time there is a deposit of flocculi, the broth still, however, remaining turbid. Short chains are also found in this medium. If the specific serum is added to the broth the fluid remains clear and a compact, felt-like growth takes place at the bottom of the tube in the course of weeks. On gelatin the growth is extremely scanty and slow; there is no liquefaction. It may be further noted that on media which are highly alkaline there is little or no growth. Its slow growth, the appearance on agar, and the microscopical characters will generally lead to its identification. The behaviour of the culture in question in the presence of the specific serum will confirm with certainty the diagnosis. In bacteriological literature no description of another microbe possessing the same biological characters can be found.

Causal association of the micrococcus melitensis with Malta fever.—The evidence collated above shows (*a*) that the micrococcus melitensis has been recovered from almost every case of Mediterranean fever which has been examined

[1] Jaccoud: Journal de Médecine, March 10th, 1899.
[2] Practitioner, September, 1887, and April, 1888; Annales de l'Institut Pasteur, 1893, vol. vii., p. 289.
[3] Mediterranean, Malta, or Undulant Fever, 1897.
[4] Transactions of the Epidemiological Society of London, vol. ix., p. 76.
[5] The biological characters of these cultures were the same as those supplied to this laboratory by Hughes.
[6] Journal of Pathology and Bacteriology, December, 1898.
[7] Loc. cit. [8] Loc. cit. [9] Loc. cit.
[10] THE LANCET, March 11th, 1899, p. 688.
[11] Loc. cit.

bacteriologically after death and has not been found elsewhere; (*b*) that the micrococcus melitensis is capable of infecting monkeys, giving rise in them to a continuous fever not unlike that in man, and usually causing death, and that by special methods rabbits and guinea-pigs have also been infected; and (*c*) that from all these animals after death the same organism has been recovered in pure culture from the blood and organs, and after cultivation this has again occasioned the disease in other animals. The final link in the chain—i.e., the proof that the micrococcus melitensis can produce Malta fever in man—has not heretofore been forthcoming. This is now furnished by two cases which have occurred as a result of inoculation with the micrococcus melitensis and by a third case the method of infection in which is not quite so definite; all these cases happened among the staff of this laboratory. They are given here in chronological order.

CHART 1.



CASE 1.—On Sept. 17th, 1897, a man accidentally scratched himself with the needle of a syringe with which he had just injected into a horse a living growth of micrococcus melitensis.[13] He immediately sucked the minute wound, plunged the hand into a 5 per cent. solution of phenol which he had by his side, and almost at once cauterised the puncture with pure phenol. But all to no purpose, for on Oct. 2nd, 15 days later, his temperature rose and he went through a typical attack of Malta fever (*vide* Chart 1).

[13] This culture was derived from a culture which had been isolated two years previously by Hughes from the spleen of a fatal case of the disease in Malta.

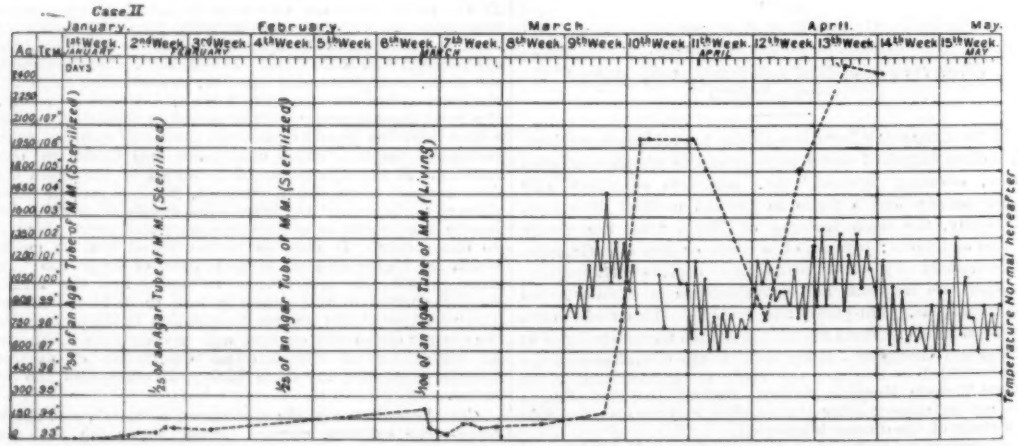
CASE 2.—On March 1st, 1898, a man, in connexion with some experiments regarding the elaboration of a method of vaccination against Malta fever, injected into his arm $\frac{1}{10}$th of an agar tube of a seven-day growth of micrococcus melitensis.[12] On March 17th, 16 days later, febrile symptoms set in and pursued a course characteristic of this fever (vide Chart 2). It is worthy of note that, as in most bacterial infections, there was a marked increase in the number of polynuclear white cells in the blood just before the onset of fever.

CASE 3.—In February, 1899, the head attendant of the laboratory, who was constantly employed in bacteriological operations with this microbe, contracted an illness which soon assumed the typical characters of Malta fever and which was complicated by severe double orchitis. The method of infection could not be definitely traced in this case.

We shall have occasion to refer in more detail to these three cases in connexion with the question of the estimation of the agglutinating substances. We may here add that the diagnosis was confirmed in all three cases by the serum sedimentation reaction. The reaction took place in high dilutions of the serum and during the course of the fever there were considerable variations in the agglutinating power of the serum. In the first two cases the agglutinating reaction still persists a year and a half and a year respectively after convalescence.

The effect of specific serum on micrococcus melitensis.—If the above observations left any room for any doubt as to the causal relation of this organism with Malta fever, that doubt would be completely removed by the investigation through which Professor Wright established that the serum of patients who are suffering from, or who have recovered from, Malta fever produces a specific agglutinating reaction on the micrococcus melitensis. This observer[13] has published 14 observations in which this coccus was sedimented after agglutination by high dilutions of the sera of patients who were suffering from, or had recently recovered from, Mediterranean fever, and he showed that the agglutination and sedimentation which were obtained in these cases with the coccus was more marked and definite than the corresponding reaction which is obtained with the bacillus typhosus in typhoid fever. In a more recent publication, along with Semple,[14] he has further shown that dead cultures of the bacteria can be employed with the same result as living cultures. During the course of our investigations we have arrived at a like conclusion. These observations have been confirmed by other observers. Aldridge[15] has reported 14 cases in Malta in which this reaction was obtained, and

CHART 2.



[13] THE LANCET, March 6th, 1897, p. 656.
[14] Brit. Med. Jour., May 15th, 1897.
[15] THE LANCET, May 21st, 1898, p. 1394: Report of the Health Department of Malta, 1898.

Elkington[16] has detected agglutination of this microbe 75 times in 158 samples of blood of various febrile patients in Gibraltar. Durham[17] has likewise obtained this phenomenon with the blood of rabbits and guinea-pigs which he had infected by means of intra-cerebral and intra-peritoneal inoculation. Further, the test is being daily employed in the laboratory of the Public Health Department of Malta.

Since the date of Professor Wright's original publications we have carefully investigated this reaction. It is the result of this investigation which we have now to present and which we shall preface by giving a short account of the methods employed. All observations were made microscopically by means of the sedimentation tubes (rather less than one millimetre in diameter) by Professor Wright.[18] Equal quantities of the serum, diluted with normal salt solutions, and of sterile emulsions of the micrococcus were employed in all cases. The emulsions were prepared from fresh agar cultures with normal saline solution. It is obvious that the sedimentation reaction of any serum when one and the same culture is used will vary with the number of bacteria which the emulsion contains. In order to make the quantitative estimations which are here reported comparable amongst themselves the following procedure was adopted. 1. The emulsions were all prepared in exactly the same way. A uniform growth in agar of from five to seven days was obtained. This was emulsified with sterile normal saline solution, a fixed quantity of which—viz., 0·25 cubic centimetres—was used for every square centimetre of agar culture. The bacteria were then killed by heating at 60° C. for from 10 to 15 minutes and finally 0 5 per cent. carbolic acid was added. In this way emulsions containing approximately the same number of bacteria were obtained. 2. When the estimation of the agglutinins was made during the whole course of a case the same emulsion, if possible, was used throughout. If a fresh emulsion had to be substituted the sedimentation reaction of the same specimen of serum was compared in the two emulsions and any difference taken into account in recording the results. Following this method we first examined as controls more than 50 samples of blood of healthy people, among whom were 11 negroes, and 101 samples taken from patients suffering from the following diseases: enteric fever, 38 cases; malarial fevers, 20 cases; liver abscess, four cases; local suppurations, 10 cases; acute streptococcic infections, five cases; rheumatic fever, five cases; tuberculosis, five cases; secondary syphilis, six cases; cancer, two cases; dysentery, four cases; acute tonsillitis, one case; and diabetes, one case. In the course of these estimations we found that nearly all the specimens of blood examined gave a well-marked, sometimes complete, sedimentation in dilutions of 1 in 2. Many gave a faint trace in dilution of 1 in 10, but the majority did not give any reaction in that dilution. In none of the above instances did we ever observe a complete sedimentation to occur in a 10-fold dilution nor did we ever see a trace of sedimentation in a 20-fold dilution. Having thus fixed the limit of the agglutinating power of normal sera and of sera derived from patients suffering from other diseases we may proceed to consider the cases in which sedimentation above these normal limits was observed. We have notes of over 120 individuals in whom this reaction was found, and as many cases were examined on several occasions we have made several hundred observations in all. A list of these cases with dilutions in which the serum reacted is given in Table I. and Table II.

On referring to the above list it will be seen that 53 cases came under observation while still suffering from Malta fever, the remainder at varying periods after convalescence had been established. In 44 febrile cases in which the sedimentation value was quantitatively determined the average dilution for a complete reaction[19] was between 600 and 700, though the limits were very wide; one serum was tested in which complete sedimentation took place in a 6000-fold dilution. Traces of agglutination occurred in these cases on the average in 1000-fold dilution. When we contrast these figures with those obtained by us in cases of typhoid fever we find that Malta fever serum sediments the micrococcus melitensis in considerably higher dilutions than does typhoid serum Eberth's bacillus, and, moreover, the clumps of agglutinated micrococci which are deposited are much more compact and defined than those of the latter. Indeed, the serum reaction of Malta fever is one of the most delicate bacteriological tests with which we are acquainted and ought undoubtedly to supersede the ordinary clinical method of diagnosis, especially as it occurs comparatively early in the course of the disease, as we shall show later. By its means we have recognised cases invalided home as gonorrhœal rheumatism, simple continued fever, debility, rheumatic fever, enteric fever, malaria, &c.

Data bearing on the early appearance of the agglutinins in the blood.—In experiments on monkeys performed by us and in those previously referred to as done by Wright and Semple it is definitely shown that the agglutinating substances may appear in the blood as early as the fifth day after inoculation of the living virus and that they are well developed by the ninth or eleventh day. The curves of the sedimentary values of the sera of a series of guinea-pigs which Durham[20] has figured show no rise before the fifth day after inoculation. This observer further states that the rate of development of the agglutinins varies inversely with the amount of the dose. Some experiments of Wright and Semple bear this out; for instance, in a monkey which had been inoculated with half an agar tube of the micrococcus the serum showed no reaction until the ninth day after inoculation, whereas the serum of a monkey infected with but one loopful of a culture gave a reaction on the fifth day. In the case of man, Aldridge,[21] in the paper to which previous reference has been made, notes his failure to observe the reaction before the fifth day after the onset of the fever. In two cases which we have investigated from the onset of the disease and in which this could be determined with accuracy a complete reaction in 400-fold dilution was observed in one and in 1500-fold dilution in the other, both on the fourth day of the pyrexia. In Case 1, mentioned above, the first observation, owing to the fact that the man was absent on duty, was not made till the ninth day after the onset of fever and the twenty-third after accidental inoculation. This observation showed complete sedimentation in 800-fold dilution.

In Case 2 it will be seen from the chart that the sedimentation value of his serum had been raised before inoculation to 100 by previous treatment with sterilised cultures. This declined to 20 on the third day after inoculation, while on the eighth day after the onset of the fever there was noted a large increase in the amount of agglutinins present in the blood, the sedimentation value being 800. From these data it will be seen that in Malta fever the agglutinating substances appear in the blood comparatively early, much sooner than in the average case of typhoid fever. They therefore possess a greater diagnostic value.

The persistence of the agglutinins in the blood after recovery.—With a view of estimating the duration of the reaction after recovery we have investigated 68 cases at different periods after convalescence with the following results. In 27 individuals examined within six months after convalescence was established the average serum dilution in which sedimentation was manifest was found to be about 350-fold. In 18 cases examined between six months and a year after recovery the mean sedimentation value was approximately 250. In seven cases examined between one and two years after recovery an average value of about 100-fold dilution was determined. After two years the reaction has been obtained, in many instances, in no higher dilutions than in normal sera; eight out of 14 samples of blood taken from persons who had suffered from the illness from two to eight years previously gave no more marked reaction than normal sera, while the remaining six gave a complete or well-marked sedimentation in 10-fold dilutions or over. We have only met with one example in which the characteristic effects of the serum were apparent at a longer interval than seven years—this case, examined seven and a half years after recovery, gave a complete reaction in 20-fold dilution.

Incubation period for man.—Case 1 and Case 2 mark with accuracy the incubation period. In the former there was an interval of 15 days between the date of infection and the onset of fever, while in the latter this interval was 16 days. Bruce[22] states that the disease has developed in England in persons who left Malta from 14 to 17 days previously, while Hughes[23] has observed instances of the onset of fever eight, 10, and 14 days after arrival in Malta. Two cases have come under our notice in which the

[16] Reports of the Sanitary Officer of Gibraltar, 1897 and 1898.
[17] Loc. cit.
[18] Brit. Med. Jour., Feb. 5th, 1898.
[19] In these cases traces of sedimentation occurred on the average up to 1000 fold dilution.
[20] Loc. cit.
[21] Loc. cit.
[22] Brit. Med. Jour., May 13th, 1899.
[23] Loc. cit.

TABLE I.—CASES OF MALTA FEVER EXAMINED DURING THE COURSE OF DISEASE.

No. of case.	—	Dilutions of serum.																					Remarks.
		10	20	30	50	70	80	100	150	200	300	400	500	600	800	1000	1200	1500	2000	4000	6000	9000	10,000	
1	Now ill.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	+	...	X	...
2	,,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	+	...	X	...	...	...
3	,,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	+	X	...	...	...	...
4	,,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	+	X	...	...	...	...	...
5	,,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	+	X	...	...	...	...	...
6	,,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	+	...	X	...	...	...	...	...
7	,,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	+	...	X	...	...	...	...	...
8	,,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	+	X	...	...	...	...	...	...	...
9	,,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	+	...	...	...	...	...	...	...	...
10	,,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	+	...	...	...	...	...	...	...	...
11	,,	...	...	...	...	...	...	...	...	...	...	...	...	...	+	...	...	...	X	...	...	...	...	...
12	,,	...	...	...	...	...	...	...	...	...	...	...	...	...	+	...	X	...	...	...	...	...	...	...
13	,,	...	...	...	...	...	...	...	...	...	...	...	...	...	+	...	...	...	...	...	...	...	...	No higher dilutions
14	,,	...	...	...	...	...	...	...	...	...	...	...	...	+	...	X	...	...	...	...	...	...	...	...
15	,,	...	...	...	...	...	...	...	...	...	...	...	+	...	...	...	...	X	...	...	...	...	...	...
16	,,	...	...	...	...	...	...	...	...	...	...	...	+	...	X	...	...	...	...	...	...	...	...	...
17	,,	...	...	...	...	...	...	...	...	...	...	...	+	...	X	...	...	...	...	...	...	...	...	...
18	,,	...	...	...	...	...	...	...	...	...	...	...	+	...	...	...	...	...	...	...	...	...	...	No higher dilutions
19	,,	...	...	...	...	...	...	...	...	...	...	+	...	...	X	...	...	...	...	...	...	...	...	...
20	,,	...	...	...	...	...	...	...	...	...	+	...	...	...	X	...	...	...	...	...	...	...	...	...
21	,,	...	...	...	...	...	...	...	...	...	+	...	X	...	...	...	...	...	...	...	...	...	...	...
22	,,	...	...	...	...	...	...	...	...	+	...	...	...	X	...	...	...	...	...	...	...	...	...	...
23	,,	...	...	...	...	...	...	...	...	+	...	...	...	...	...	X	...	...	...	...	...	...	...	...
24	,,	...	...	...	...	...	...	...	...	+	...	...	X	...	...	...	...	...	...	...	...	...	...	...
25	,,	...	...	...	...	...	...	...	...	+	...	...	...	...	...	...	...	...	...	...	...	...	...	...
26	,,	...	...	...	...	...	...	...	+	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...
27	,,	...	...	...	...	...	...	+	...	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...
28	,,	...	...	...	...	...	...	...	+	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...
29	,,	...	...	...	...	...	...	+	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30	,,	...	...	...	...	...	...	+	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...
31	,,	...	...	...	...	...	...	+	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	No higher dilutions
32	,,	...	...	...	...	...	...	+	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Do.
33	,,	...	...	...	...	...	...	+	...	...	...	X	...	...	...	...	...	...	...	...	...	...	...	...
34	,,	...	...	...	...	...	...	+	...	...	...	X	...	...	...	...	...	...	...	...	...	...	...	...
35	,,	...	...	...	...	...	...	+	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	No higher dilutions
36	,,	...	...	...	...	...	...	+	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Do.
37	,,	...	...	...	...	...	...	+	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Do.
38	,,	...	...	...	...	...	+	...	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...
39	,,	...	...	...	...	...	+	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
40	,,	...	...	...	...	...	+	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
41	,,	...	...	...	...	...	+	...	...	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...
42	,,	...	...	...	...	+	...	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
43	,,	...	...	...	+	...	...	...	...	...	...	X	...	...	...	...	...	...	...	...	...	...	...	...
44	,,	...	...	...	+	...	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
45	,,	...	...	...	+	...	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
46	,,	...	...	...	+	...	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
47	,,	...	+	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
48	,,	...	+	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	No higher dilutions
49	,,	...	+	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Do.
50	,,	...	+	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Do.
51	,,	+	...	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
52	,,	+	...	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
53	,,	...	...	...	...	...	...	...	...	...	...	+	...	...	...	...	...	...	...	...	...	...	...	...

+ denotes complete sedimentation. X denotes marked, but not complete, sedimentation.

first symptoms began at least from 18 to 20 days after leaving Malta. From these data it will be seen that the incubation period may vary between eight and 20 days, the usual period being probably about 15 days.

Geographical distribution.—Wright and Smith[24] by means of the serum sedimentation test confirm the fact that Bruce and others had long surmised—viz., that Malta fever is not confined to the Mediterranean basin. In the publication referred to these authors tabulated 10 cases invalided from India in which the serum reaction gave a sedimentation value of an average of about 300-fold dilution. Many of these cases at the time of examination presented the usual sequelæ of the disease. Since the date of that note 10 other examples have been observed by us in this hospital. These had been invalided for such diseases as malaria, enteric fever, and rheumatism. It is worthy of remark that 14 out of the total of 20 such cases observed came from a comparatively small station in the Punjab—namely, Meean, Meer; the other places in India where infection has occurred are Calcutta, Subathu, and Nowshera. One man contracted the disease in Hong-Kong. This list may be further extended by the following cases

[24] Brit. Med. Jour., April 10th, 1897.

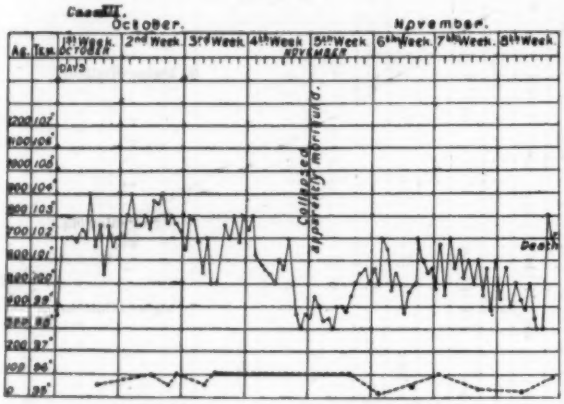
TABLE II.—RECOVERIES FROM MALTA FEVER WHICH HAVE SHOWN COMPLETE REACTION IN 10-FOLD DILUTION AND OVER.

No. of case.	Period after fever.		Dilutions of serum.															Remarks.
	Year.	Month.	10	20	40	50	60	80	100	150	200	300	400	500	600	800	1000	1500	
1	...	1	...	...	...	...	...	...	...	...	+	...	...	...	...	X	...	...	...
2	...	1	...	...	...	...	...	...	...	...	+	...	X	...	...	...	...	...	...
3	...	1	...	...	...	...	...	...	...	+	X	...	...	...	...	...	...	...	...
4	...	1	...	...	...	...	...	+	...	...	X	...	...	...	...	...	...	...	...
5	...	1	...	...	...	...	...	+	...	X	...	...	...	...	...	...	...	...	...
6	...	1	...	...	+	...	X	...	...	...	...	...	...	...	...	...	...	...	...
7	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	+	...	No higher dilutions.
8	...	2	...	...	...	...	...	...	...	...	+	...	...	...	...	X	...	...	...
9	...	2	...	...	...	...	...	...	...	...	+	...	X	...	...	...	...	...	...
10	...	2	...	...	...	...	...	...	...	...	+	...		...	...	...	...	...	...
11	...	2	...	...	...	...	...	...	...	+	X	...	...	...	...	...	...	...	...
12	...	2	...	...	...	...	...	+	...	...	...	...	...	X	...	...	...	...	...
13	...	2	...	...	...	...	...	+	...	...	...	...	X	...	...	...	...	...	...
14	...	2	...	...	...	+	...	...	...	...	...	...	...	...	...	...	...	...	No higher dilutions.
15	...	2	...	...	...	+	...	...	...	...	...	...	...	...	...	...	...	...	Do.
16	...	2	...	...	+	...	...	...	...	...	X	...	...	...	...	...	...	...	...
17	...	3	...	...	...	...	...	...	...	...	...	+	...	...	...	...	X	...	...
18	...	3	...	...	...	...	...	...	+	...	...	...	...	...	...	...	...	...	No higher dilutions.
19	...	3	...	...	...	...	...	...	...	...	X	...	...	...	...	...	...	...	...
20	...	3	...	...	...	...	...	...	...	X	...	...	...	...	...	...	...	...	...
21	...	3	...	...	...	...	...	+	...	...	...	...	...	...	X	...	...	...	...
22	...	3	...	...	...	...	...	+	...	...	...	...	X	...	...	...	...	...	...
23	...	3	...	...	...	+	...	...	...	...	...	...	...	...	...	...	...	...	No higher dilutions.
24	...	3	...	+	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...
25	...	3	...	...	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...
26	...	3	+	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
27	...	4	...	...	...	...	...	...	...	...	...	...	...	+	...	...	...	X	...
28	...	4	...	...	...	...	...	...	...	...	...	+	...	X	...	...	...	...	...
29	...	4	...	...	...	...	...	...	+	...	X	...	...	...	...	...	...	...	...
30	...	4	...	...	...	...	...	+	...	X	...	...	...	...	...	...	...	...	...
31	...	5	...	...	...	...	+	...	X	...	...	...	...	...	...	...	...	...	...
32	...	5	...	...	...	+	...	...	...	...	...	...	...	...	...	...	...	...	...
33	...	6	...	...	...	...	...	...	...	+	...	...	...	...	X	...	...	...	...
34	...	6	...	...	...	...	...	...	...	+	...	...	...	X	...	...	...	...	...
35	...	6	...	...	...	...	...	...	...	+	...	...	...	X	...	...	...	...	...
36	...	6	...	...	...	...	...	...	...	+	...	...	...	X	...	...	...	...	...
37	...	6	...	...	...	...	...	...	...	+	...	...	...	X	...	...	...	...	...
38	...	6	...	...	...	...	...	...	+	...	X	...	...	...	...	...	...	...	...
39	...	6	...	...	...	...	...	...	+	...	...	...	...	...	...	...	...	...	No higher dilutions.
40	...	6	...	...	...	...	...	+	...	...	...	X	...	...	...	...	...	...	...
41	...	6	...	...	...	...	...	+	...	...	...	X	...	...	...	...	...	...	...
42	...	6	...	...	...	...	...	+	X	...	...	...	...	...	...	...	...	...	...
43	...	6	...	...	...	+	...	...	...	...	...	...	...	...	...	...	...	...	No higher dilutions.
44	...	6	...	...	...	+	...	...	...	...	...	...	...	...	...	...	...	...	Do.
45	...	6	...	+	...	...	...	X	...	...	...	...	...	...	...	...	...	...	...
46	...	6	...	...	...	...	...	X	...	...	...	...	...	...	...	...	...	...	...
47	...	6	...	+	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...
48	...	6	+	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
49	...	6	+	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	No higher dilutions.
50	...	7	...	...	...	...	...	+	...	...	...	X	...	...	...	...	...	...	...
51	...	7	...	...	...	...	...	X	...	...	...	...	...	...	...	...	...	...	...
52	...	8	...	...	...	...	...	+	...	...	...	X	...	...	...	...	...	...	...
53	...	8	...	...	...	...	...	+	...	X	...	...	...	...	...	...	...	...	...
54	...	9	...	...	...	...	...	...	...	...	...	+	...	...	...	...	...	...	...
55	...	10	+	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
56	1	...	...	...	...	...	...	+	...	...	X	...	...	...	...	...	...	...	...
57	1	...	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
58	1	2	...	...	...	...	...	+	...	...	X	...	...	...	...	...	...	...	...
59	1	2	...	+	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...
60	1	4	...	...	...	...	...	...	...	...	X	...	...	...	...	...	...	...	...
61	1	8	...	...	...	+	...	X	...	...	...	...	...	...	...	...	...	...	...
62	1	9	+	...	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...
63	3	...	...	...	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...
64	4	...	+	...	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...
65	4	...	+	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
66	5	...	...	...	...	+	...	...	X	...	...	...	...	...	...	...	...	...	...
67	5	...	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
68	7	...	...	+	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...

+ denotes complete sedimentation. X denotes marked, but not complete, sedimentation.

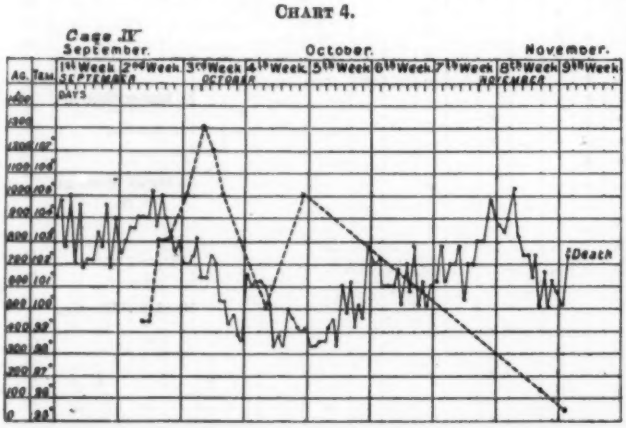
which have all been tested with cultures sent out originally from this laboratory. 1. Lieutenant W. Glen Liston, I.M.S., has privately reported to us a case of fever contracted in Secunderabad in the Deccan the serum from which gave a reaction in 80-fold dilution at least with the micrococcus melitensis. 2. Dr. Musser and Dr. Sailer[25] report the case of an army officer who appears to have contracted the disease in Puerto Rico during the Spanish-American war. Malarial

CHART 3.



plasmodia were frequently sought for in his blood but never found. A culture of micrococcus melitensis was agglutinated by high dilutions of the patient's blood. 3. Kretz[26] records the case of a physician who had contracted an obstinate fever in Ajaccio, Corsica. This continued six months. After recovery his blood serum agglutinated the micrococcus melitensis in a dilution of 300-fold. 4. The following case which has recently come under our notice evidently contracted the disease in this country. A man, aged 26 years, had not been abroad since the age of eight years. From March, 1897, till the end of September of the same year he was resident physician in a hospital in

CHART 4.



Plymouth. On Oct. 1st he assumed the duties of junior house physician in the out-patient department at St. Bartholomew's Hospital, London, where he was employed during the whole of that month. He first began to feel ill in the beginning of November, complaining of headache, loss of appetite, lassitude, and general malaise. This condition persisted more or less till December, when it became complicated by œdema of the feet. The œdema afterwards extended up the legs. No cardiac lesion could be detected and the urine was normal. Up to this period of the illness he was not confined to bed, but rested as much as was consistent with the fulfilment of his duties. The œdema lasted for about a month and was succeeded by pain and swelling in certain joints. The hips, knees, ankles, left wrist, and left temporo-maxillary joints were all attacked in turn. After the disappearance of these latter symptoms left orchitis set in and lasted for about a fortnight. Convalescence was established in March, 1898. Only during the period when the joints were affected was the temperature ever taken. At that time it was usually found to be about 102° F. in the evenings. The serum reaction was not tried during the course of the illness, but was tested by us one year and two months after convalescence. It was found to give complete sedimentation of micrococcus melitensis in 20-fold dilution and traces up to 50. From the facts stated above we may fairly conclude that this was a case of Malta fever contracted either in Plymouth or in London, although no definite source of infection can be traced.

Data bearing on the evolution of the agglutinins during the course of Malta fever.—We have seen above that the agglutinating substances which make their appearance in the blood in cases of Malta fever are specific and that their action on the micrococcus of Bruce, dead or alive, affords an easy and absolutely trustworthy method of diagnosis between this disease and other fevers which clinically simulate it. We have now to put on record the data which we have collected relating to the evolution of these substances during the course of the disease. We have already described the method which was used in making quantitative estimations of agglutinins and have only to add that in drawing up the agglutination curves herewith presented the expression which has been adopted for the sedimenting value of each serum was the dilution in which that serum completely sedimented the bacteria, with which it was brought in contact, so as to leave the supernatant fluid clear. The data were obtained from observations taken during the course of Malta fever in man. In all 15 cases were investigated. Seven of these came under observation practically from the beginning of the fever, while the remaining eight were brought before our notice during relapses some months after the initial attack.

CASE 1.—This is Case 1 already referred to above. The fever ran a comparatively short course and presented no complications. On turning to the chart it will be seen that the agglutinating substances were developed in large quantity soon after the onset of fever and that, with the exception of a slight diminution just before a short relapse, this quantity was maintained till convalescence was established.

CASE 2.—This is Case 2, to which reference has already been made. The attack was a sharp one, although of comparatively short duration. It was complicated by severe muscular pains, which, however, did not retard convalescence. The evolution of the agglutinins in this case is of great interest. The salient features of the curve are these: (1) that only a small amount of agglutinins was developed as a result of the three injections of sterilised cultures,[27] which preceded the inoculation with the living culture; (2) that a well-marked diminution in the amount of agglutinins followed the inoculation of the living organism; (3) that a slight and gradual recovery in the amount of agglutinins occurred during the period of incubation; (4) that a rapid increase in the amount of agglutinins began soon after the onset of the fever; and (5) finally, that, with the exception of a slight fall at the beginning of a recrudescence of the temperature, this large amount of agglutinins persisted till convalescence was well established.

CASE 3.—The patient was a man, aged 27 years. He had

[25] Proceedings of the Pathological Society of Philadelphia, Feb. 1st, 1899.

[26] Wiener Klinische Wochenschrift, No. 49, 1897.

[27] The quantity injected on these occasions was as follows: first injection, one-fiftieth of an agar tube (killed at 60° C.); second injection, one-twenty-fifth of an agar tube (killed at 60° C.); third injection, one-twenty-fifth of an agar tube (killed at 60° C.); and fourth injection, one-thousandth of an agar tube (living).

CHART 5.

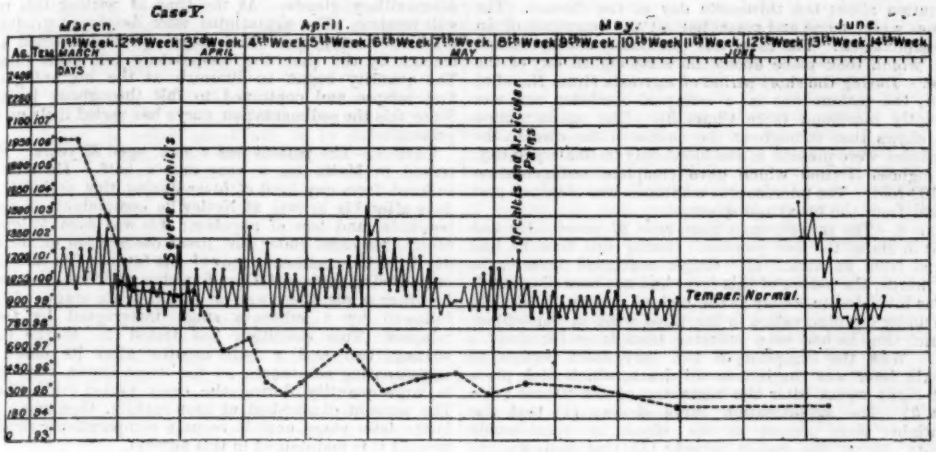


CHART 6.

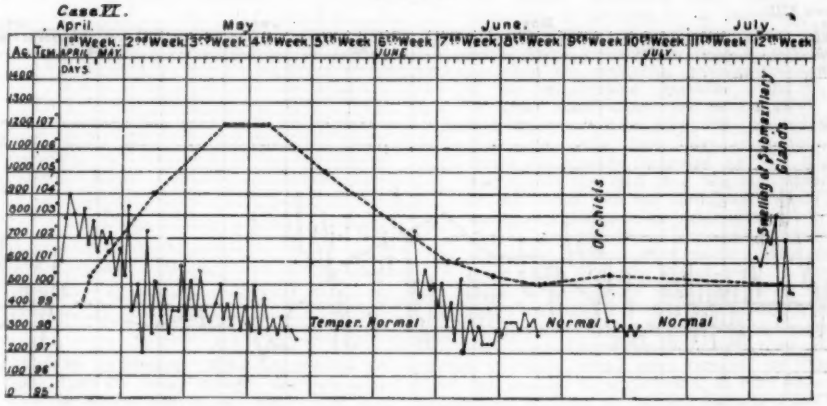
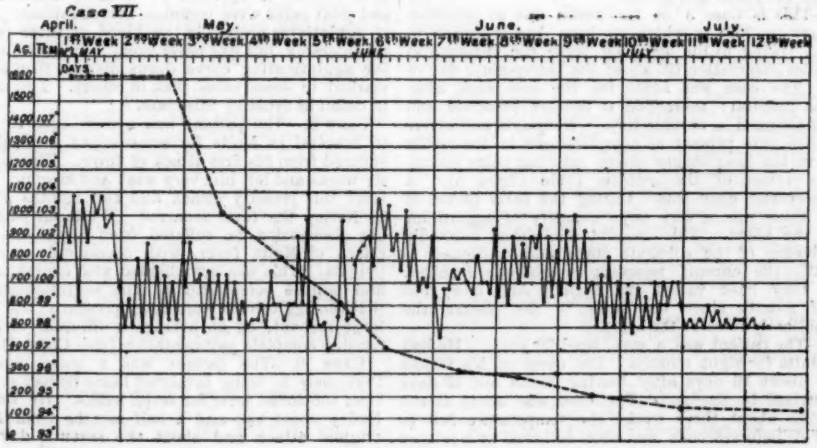


CHART 7.



been stationed at Malta for six years but had never suffered from any fever during this period. Three days before leaving Malta he began to feel lassitude and general malaise. Pyrexia began on the voyage home. He came under our observation about the thirteenth day of the disease. The case was a severe one and presented all the symptoms of an acute septicæmia. The fever was practically continuous till death, which took place about the sixty-eighth day of the illness. During the short period of apyrexia (from Nov. 3rd to 7th) the patient was in a collapsed condition and was apparently moribund (vide Chart 3). The agglutination curve shows that throughout the course of the disease the agglutinins were present in the blood only in small quantity. The highest dilution which gave complete sedimentation was 100-fold. The micrococcus melitensis was obtained post mortem from the blood and spleen.

CASE 4.—The patient was a man, aged 27 years. He had served in Malta for four months. During this time he had suffered from an attack of "simple continued fever"; in other words, the nature of this fever had not been diagnosed. He was invalided to Netley at the end of August, 1898. He came under our observation in the third week in September, at which time he had been suffering from fever for about a week. With the exception of two very short periods of apyrexia fever was continuous till death, which took place about eight weeks after the beginning of the illness (vide Chart 4). The agglutination curve shows: (1) that the agglutinins were present in the blood in considerable quantity during the earlier period; (2) that their amount was markedly increased just before and during the two periods of comparative apyrexia; and (3) that these substances almost disappeared from the blood shortly before death. Pure cultures of the micrococcus melitensis were obtained from the blood and spleen.

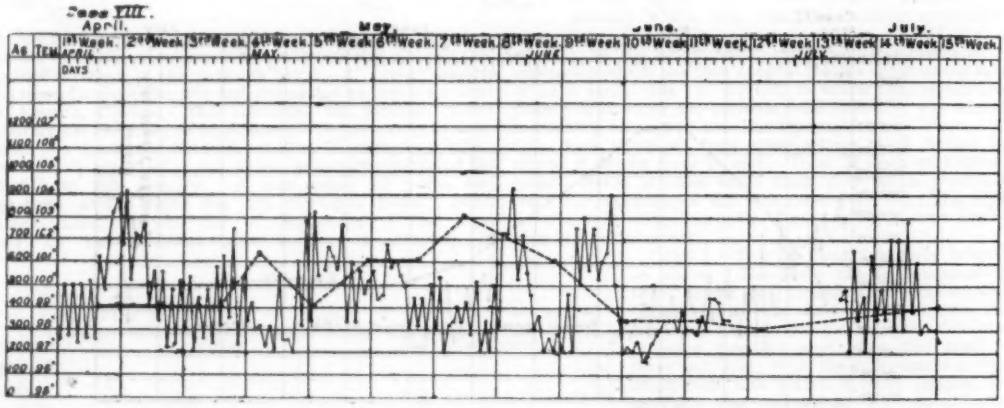
CASE 5.—This is Case 3 of the series due to infection from cultures (p. 702) to which we have had occasion to refer above. Owing to his being on leave the patient did not come under observation till about the thirty-ninth day of the illness. The case was acute for the first week after admission to hospital; thereupon it became subacute and ultimately it assumed a chronic form. Neuralgia and severe double orchitis were present as complications in the earlier period and in the later stages severe articular pains accompanied by a return of the orchitis (vide Chart 5). A relapse supervened upon this. During the early period of observation there was a very large quantity of agglutinins present in the blood. This amount diminished markedly at the beginning of the subacute stage and continued to diminish till the chronic relapsing stage was reached. Since then they have varied but little. And now, four and a half months since the onset of the disease, the amount practically remains the same.

CASE 6.—The patient was a man, aged 26 years. He had served in Malta for eight months. The onset of his illness dates from about 18 days after leaving Malta and 10 days after his arrival in England. The case was acute at the outset. After about three weeks the temperature fell to normal. This defervescence was soon followed by a relapse which lasted for a week. This was succeeded by an orchitis which was accompanied, however, by little disturbance of temperature. About three weeks after the orchitis a second relapse began. This was complicated with swelling of the submaxillary glands. At the time of writing this relapse still persists. The agglutinins were developed gradually in the blood during the initial stage and had reached a large amount by the time the temperature fell (vide Chart 6). The quantity began to diminish at the beginning of the first relapse and continued to fall throughout its course. Since this the sedimentation curve has varied little up to the present.

CASE 7.—The patient was a man, aged 22 years. He had served in Malta for a year and a half. He had never suffered from any kind of fever during this period. A few days after his arrival at Netley he complained of malaise, lassitude, and loss of appetite; this was soon followed by fever. He came under our direct observation on the fourth day from the commencement of the fever. The case may be compared with that of Case 5, although it was more severe. In other words, there was an initial acute stage, which was followed by a subacute stage interrupted by frequent relapses. This condition has lasted up to the time of writing, two and a half months after its onset. The agglutinating substances, as the curve shows, were present in large quantity during the early period (vide Chart 7). The amount diminished at first rapidly, then more slowly in the later stage until it became comparatively small. At present it is maintained in this amount.

The remaining eight cases came under our notice at

CHART 8.



periods varying from two to six months after the onset of the disease. They had been invalided from Malta on account of this malady. They were cases of subacute or chronic fever, with periods of apyrexia of variable duration. Neuralgia and joint pains were common complications. The quantity of agglutinins present in the blood of these patients varied considerably, but was never great. In each individual case the agglutinating curve shows distinct rises and falls, more marked in some cases than in others. Two cases are given in detail as types of this class.

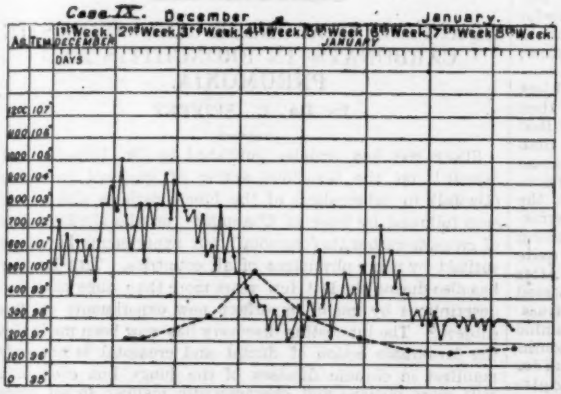
CASE 8.—The patient was a man, aged 21 years. While in hospital in Malta for some slight surgical affection he suffered from his first attack of fever. This lasted for about six weeks and left him very weak and anæmic. Four months after this primary attack and two months after his arrival at Netley the fever recurred. While the patient was under our observation he suffered from a well-marked subacute attack of Malta fever, with occasional periods of higher pyrexia. This was complicated with neuralgias, joint pains, and profuse perspirations. The agglutination curve shows that the agglutinins were never present in the blood in very large amount, on an average a dilution of about 500-fold causing complete sedimentation (*vide* Chart 8).

CASE 9.—The patient was a man, aged 27 years. Previously to being invalided home he had suffered in Malta from continued fever for seven weeks. He was admitted to Netley about two and a half months from the onset of the original attack and about the seventh day of a relapse,

which had begun on the voyage home. This relapse lasted for about three weeks and after a week of apyrexia was followed by a second relapse which was, however, less severe and of shorter duration than the first. The agglutination curve shows that the agglutinins during the period under review were present in the blood in variable but at no time in large quantities. The increase in the amount at the beginning of the apyrexial period is worthy of note (*vide* Chart 9).

Inferences which may be drawn from the above observations.—The easiest way of critically sifting the data which have been placed on record above will be to classify the cases in accordance with their clinical features, thereupon to take up each category of cases separately and inquire what is the agglutinating curve which corresponds to each particular category. From the brief sketch of the cases which have been collated above it appears that they may be divided into the following clinical groups:—1. Severe cases which end fatally within a comparatively short time. Case 3 may serve as an example of this category. 2. Severe cases which run a more prolonged course and succumb after one or two relapses. Case 4 may serve as an example of this class. 3. Sharp attacks of fever, which last for a comparatively short time, convalescence being rapidly established without any or after a slight relapse only. These cases have none of the usual complications of the subacute and chronic cases. Cases 1 and 2 are types of this group. 4. Cases which begin acutely but

CHART 9.



which become subacute or chronic. Frequent relapses are usual. They last often for many months and are complicated with orchitis, severe neuralgias, joint pains, and profuse perspirations. They recover eventually. Cases 5, 6, 7, 8, and 9 belong to this category.

Having thus framed our clinical groups we may now inquire what is the nature of the agglutinating curve in each group. In the first group the agglutinins are present in the blood only in small quantity throughout the course of the disease, a 100-fold dilution being the highest in which complete sedimentation was observed in the only case in this category which we have had the opportunity of observing. In the second group the agglutinins may be present in large quantity in the early period of the disease but almost disappear from the blood some time before death. In the case which falls under this category at one time such a high dilution as 1300-fold gave complete sedimentation, whereas at death the highest dilution giving this reaction was 50-fold. In the third group the agglutinating substances are present in large quantity early in the disease. The amount remains about constant till convalescence is established. The average of the highest dilutions in the cases of this category was about 2000-fold. Finally, in the fourth group the agglutinins are found present in the blood in large quantity in the initial stage but fall to a much lower and variable amount during the later stages, the average which then gives complete sedimentation being about 300-fold dilution. The contrast between the evolution of these substances in Group 3 and Group 4 is especially worthy of note.

These results substantiate, as far as they go, the inferences which Durham[28] has drawn from a series of observations carried out on rabbits and guinea-pigs infected by means of intra-cerebral inoculation of micrococcus melitensis. This observer showed that in these animals: (*a*) rapidly fatal infections do not lead to a development of agglutinins in any large quantity in the blood; (*b*) infections in which the animals survive a longer time but ultimately die may be divided into two groups—(1) those in which the amount of agglutinins, at one time comparatively large, diminishes greatly before death, and (2) those in which the quantity of the agglutinating substances remains comparatively high up to death; and (*c*) infections in which the animals survive may lead to either a great or small production of agglutinins. It will thus be seen that our observations on man coincide with those of Durham on animals in all points but one—namely, that we have no cases to correspond to those constituting Durham's class (*b*) (2); cases, that is, in which the agglutinins were present in comparatively large quantity at death.

Value of an estimation of the agglutinating substances as an aid to prognosis.—A cursory study of the cases which have been detailed above and the charts of which are appended will be sufficient to make it apparent that a single estimation of the agglutinins at any one time during the course of an attack of Malta fever would not yield much information as to the severity of the case nor would it serve as a guide as to its future progress. Further, even a series of observations without an accompanying knowledge of the main clinical features of the case would not justify the observer in forming an opinion as to the probable issue of the case. On the other hand, a series of observations in conjunction with a knowledge of the clinical symptoms would afford much valuable help in arriving at a prognosis. From the data collated above and from the inferences we have drawn from these data it would appear to us that the following conclusions are justified: 1. An unfavourable prognosis would be suggested in those cases which are severe from the outset and have a persistently low agglutinating reaction. In such cases the prognosis would no doubt be already indicated by the clinical symptoms, but the fact that the agglutinating power of the blood was low throughout would materially strengthen the clinician in his opinion. 2. We should also be apprehensive of the result in grave attacks in which the agglutination reaction value rapidly falls from a high figure to almost zero. 3. On the other hand, a persistently high and rising agglutination curve sustained well into convalescence would augur an auspicious and speedy ending to the case notwithstanding the acuteness of the symptoms. 4. Finally, a guarded prognosis would seem requisite in those cases in which the amount of agglutinins, at first large, decreases considerably, although the clinical features of the case might not give rise to any anxiety. In such instances a long illness and one complicated with relapses would be anticipated. It is evident that the estimation of the amount of agglutinins present in the blood is the only sure method of deciding whether a case belongs to one or other of the last two categories.

It is interesting and important to note that Courmont of Lyons[29] has arrived at similar conclusions in regard to typhoid fever. This observer investigated the evolution of the agglutinins in 52 cases of typhoid fever and also critically analysed the observations of Widal and Sicard[30] bearing on the same problem. His conclusions are as follows. 1. A large quantity of agglutinins present in the blood is always favourable (the larger it is the better), especially if this coincides with a remission of the temperature. 2. A small quantity of agglutinins with a rise of temperature is always unfavourable. 3. A strong agglutinating power is good at all times in the course of the disease; a low agglutinating power is usually bad, as the latter condition is found either in slight forms with a tendency to relapse or in very severe cases.

In conclusion, it is our pleasant task to have to thank Lieutenant-Colonel Webb, R.A.M.C., in charge of the medical division of this hospital, for the many opportunities

[28] Loc. cit.

[29] Courmont: Sero Pronostic de la Fièvre Typhoïde, 1897, and Presse Médicale, No. 2, Jan. 5th, 1898.

[30] Annales de l'Institut Pasteur, May 25th, 1897, p. 403.

he has afforded us of investigating the cases under his charge.

Note.—The charts are divided into weeks. The continuous line shows the temperature, which was taken twice a day. The broken line shows the amount of agglutinins present.

A CASE OF HYDROCELE OF THE SAC OF A FEMORAL HERNIA.

BY DUNCAN MACARTNEY, M.A. EDIN., M.D. GLASG.,

SURGEON TO THE GLASGOW CANCER HOSPITAL; ASSISTANT SURGEON TO THE GLASGOW WESTERN INFIRMARY.

THE report of a case of this extremely rare condition under the care of Dr. F. C. H. Piggott by the house surgeon of Teignmouth Hospital, Mr. A. A. Bradburne, which was published in THE LANCET of July 15th, 1899, p. 157, forcibly reminds one of how rarities come under notice not singly but in small groups, to re-appear perhaps after a long interval. In surgical wards it is quite noticeable how groups of abdominal cases or strangulated hernie may appear in a day and none appear again for a long time.

Three months ago I operated on a patient whose case is almost identical with that under the care of Dr. Piggott. It is within the experience of most of us that hernia in a child may be cured for a more or less prolonged period by the careful use of a well-fitting truss for two or three years, but I think that it is extremely rare to find such a condition cured in a patient of advanced years; least of all if the hernia is femoral.

My patient, a woman, aged 56 years, had been the subject of femoral hernia first about six years ago. It was then reducible, she informed me. Her medical attendant at that time ordered her to wear a truss. This she did for more than four years and it was at the end of this period that she was placed under my care. When first seen by me she had considerable pain and redness of the skin over the part, the tissues being soft and atrophied by the pressure of the truss-pad. The swelling, as usually found in femoral hernie, along and below the line of Poupart's ligament, was quite characteristic; but the hernia was irreducible now. After a few days' rest in bed the local pain and redness passed away and she was allowed to get up, discarding the truss. Several times since then I had occasion to examine the part and found it *in statu quo antea*. About three months ago she had occasion to stand at a meeting of some kind for several hours. While standing there she felt something give way in the groin and pain almost at once set in. With some difficulty she got home and went to bed. I was sent for and on examination found that the hernial tumour was larger, distinctly painful to the touch, and irreducible. There was no vomiting, the bowels had just moved naturally, the temperature was normal, her face was not like that of a patient with intestinal obstruction, and the pain was confined to the tumour. Keeping the possibility of strangulation in mind I had the parts well fomented for several days. The pain became less but the swelling and irreducibility still persisted. I recommended operation, which was also advised by Dr. Hector Cameron, who was called in in consultation.

The operation was done on June 1st. Chloroform was administered by Dr. J. L. Carstairs. An incision was made over the tumour from Poupart's ligament downwards and outwards along its whole length. On getting down to the mass I found a large piece of omentum firmly matted together and slightly changed in colour and consistence, being yellower and firmer with less blood-supply than normal; in size, about half of a man's fist and tapering up to a neck-like process which ended in the crural canal. There was no defined sac around the mass of fat, but on its inner side where it made for the ring there was a sac also tapering towards the crural ring the wall of which was quite the commonly met with hernial sac with serous straw-coloured fluid as contents. This sac was quite separated from the abdominal cavity. Neither finger nor probe could get into the ring, the crural canal being effectively plugged by what had been the neck of the sac and the part of omentum within the canal becoming consolidated and adhering to the surrounding tissue. I removed the whole mass after ligaturing with strong catgut at the ring and anchoring this stump to Poupart's and Gimbernat's ligaments. The bleeding was stopped. The wound was cleaned and sewn up with about 20 fishing-gut sutures. On cutting into the omentum removed there appeared a mass of recent blood-clot of the size of a large walnut. So the symptoms were explained: the truss had been worn lightly over the neck of the unreduced omental hernia or the omentum may have slipped down behind the truss. The steady pressure had obliterated the sac-neck and cured the hernia, leaving the omentum outside, which in the meantime united to the sac and the tissues in Scarpa's triangle and secured its blood-supply therefrom. The stress of prolonged standing had caused the rupture of a small vessel in the somewhat degenerated mass, forming a hæmatocele—hence the feeling of something giving way and the subsequent pain. The patient is now three months after operation taking a holiday down the Clyde.

My case seems to come under the category defined by Erichsen and quoted by Mr. Bradburne: "This disease must not be confounded with the accumulation of fluid in whatever quantity in strangulated herniæ or in hernial sacs that communicate with the peritoneal cavity. Its distinguishing feature is the accumulation of fluid in a part of the sac that has been cut off from all communication with the cavity of the peritoneum," and it is another proof of the advantage of keeping an open mind in operating on hernia, whether strangulated or not. It is best never to have any definite expectations as to what you will find, for here, more than in any surgical operation, the unexpected oftenest happens.

Glasgow.

GUAIACOL CARBONATE AND CREASOTE CARBONATE IN BRONCHITIS AND PNEUMONIA.

BY DR. R. SEIFERT.

SINCE the first articles published by Dr. Hölscher and myself [1] on the beneficial action of guaiacol carbonate (Duotal) in tuberculosis of the lungs, articles which were soon followed by those of Chaumier [2] on the similar action of creasote carbonate (creasotal), our experiments have been verified by many physicians of all countries. THE LANCET has also during the last few years more than once published descriptions by me of important new experiments on this subject.[3] The interesting discovery has now been made that the favourable action of duotal and creasotal is not only manifest in chronic diseases of the lungs but even in a still more obvious and characteristic manner in all acute diseases of the respiratory organs. According to the published statements of the French physicians, Dr. Cassoute and Dr. Corgier, pneumonia in all its complicated forms seems to have been deprived of all danger by the new method of treatment.

At the Pediatric Congress which was held at Marseilles last year Dr. Cassoute, physician-in-chief to the Marseilles hospitals, gave a brief preliminary notice of his new method for the treatment of pulmonary affections, and it has now been described in detail by Dr. Corgier in a pamphlet entitled, "The Treatment of Acute Broncho-Pulmonary Affections by Creasotal" (Montpellier, 1899). Dr. Cassoute's new method is distinguished by the certainty and rapidity of its curative effects not less than by its simplicity. All other medication with the exception of cardiac tonics, when such are indicated, is omitted; so also are all the usual adjuvants in the treatment of these cases. At the very most packs are occasionally employed. The method consists in the continuous administration of fairly large doses of creasotal. In most cases a typical fall of temperature occurred during the first 24 hours of treatment, and if the creasotal was continued for a sufficiently long period of time the apyrexia was permanent. The temperature curve rose again, however, when the drug was discontinued before the auscultatory signs disappeared. Relapses and sequelæ, so frequently seen under other methods, were entirely absent. It is remarkable that even the most modern and exhaustive text-books, whilst they describe all possible methods of treatment of pneumonia and broncho-pneumonia, say nothing of the antiseptic

[1] Berliner Klinische Wochenschrift, 1891.
[2] THE LANCET, Jan. 22nd, 1898, p. 222.
[3] THE LANCET, Nov. 14th, 1896, p. 1373, and April 2nd, 1898, p. 960.

one, directed against the infection which is the cause of the disease. Creasotal has been proved to be by far the most suitable remedy for this purpose, possessing the powerful antiseptic action of creasote without its unpleasant and dangerous properties. By its means the entire body can be to a certain extent impregnated with creasote without any irritation of the digestive canal. The absorption of the drug by the intestine is a slow and continuous process, whilst its elimination takes place with rapidity. One hour after its ingestion creasote can be demonstrated in the breath and urine. A continuous infiltration of creasote into the stream of the circulation can be effected by creasotal, undoubtedly influencing the life conditions of the pathogenic bacteria unfavourably. The action of creasotal is better in proportion as the infection for which it is employed is mild and recent. In the simpler cases, such as febrile bronchitis and broncho-pneumonia of medium severity, when creasotal is administered at the very beginning of the illness, the temperature falls at once and does not rise again, the auscultatory signs rapidly disappear and the patient's general condition quickly improves. In severer cases of pneumonia and broncho-pneumonia dependent on more virulent infection there occurs either a sudden fall of temperature, often followed next morning or next morning but one by a temporary rise, or there is a gradual defervescence. The entire course of the disease is noticeably shortened. In pseudo-lobar broncho-pneumonia the fall of temperature occurs even earlier than in the lobar forms. Of course, some cases of pneumonia in very advanced stages with extensive grey hepatisation do not react to the creasotal treatment. It should always be tried, however, since it is never possible to tell with certainty the degree of permeability of the lung. Expectorants, antipyretics, and even quinine are entirely omitted. The tolerance of the gastro-intestinal canal for creasotal was found to be complete. The appetite returned quickly. The shortening of the disease and the prevention of relapses must cause the chronic, creeping forms of the malady and its infectious sequelæ—tuberculosis, gangrene, cardiac and renal affections, &c.—to become very rare. Creasotal is also efficacious in the fœtid forms of the affections under consideration.

For adults Dr. Cassoute prescribes 10 grammes (two and a half drachms) in the first 24 hours in a mixture consisting of 10 grammes (two and a half drachms) of creasotal (Von Heyden), and 60 grammes (two ounces) of emulsion, to be taken in four doses. Or even more simply, he prescribes one ounce of creasotal (Von Heyden) and directs one teaspoonful (about five grammes, equal to one and a quarter drachms) to be taken morning and night in a cup of hot sugared milk. The doses for children are as follow:—Up to one year of age, from 0·25 to one gramme (from four to 15 grains); from one to four years of age, from one to three grammes (from one-quarter to three-quarters of a drachm); from four to six years of age, from three to four grammes (from three-quarters to one drachm); from six to 10 years of age, from four to five grammes (from one to one and a quarter drachms). According to his prescription the quantity of creasotal, according to age as above, is mixed with 60 grammes (two ounces) of emulsion or syrup and taken daily in four divided doses. These doses can be increased without any danger. And since we can never tell in the beginning of the disease how virulent the infection may be a fairly large dose should be taken at first. Only when the temperature has sunk to the normal may the original dose be reduced to one half; the febrile curve must be carefully kept under observation, and the larger doses immediately resorted to when it begins to rise again. The administration of the creasotal must be stopped gradually, the dose being diminished in amount and given less frequently, until the last auscultatory sign has disappeared. Until the lesions are cicatrised a re-infection or a recrudescence of the virulence of the weakened bacteria is to be feared.

Creasotal has a remarkable power of reducing temperature in bronchitis and pneumonia. In simple bronchitis, especially in children, where there are no very alarming symptoms but only moderate fever in the evenings, varying from 38·0° C. (100·4° F.) to 39·0° C. (102·2° F.), and sonorous râles, creasotal works wonders. Since the action of the drug is the more energetic the milder the infection it is readily conceivable that we get especially rapid results in these benign cases. The evening temperature falls upon the day that the first dose of creasotal is administered. When the administration is continued for a few days, until the auscultatory signs have completely disappeared, the apyrexia is permanent and cure results. In pneumonia the temperature begins to fall a few hours after the administration of the first dose of creasotal; apyrexia is reached in 24 or at the most in 48 hours. This crisis is observed under the classical treatment, and even under no treatment at all; but since influenza has become endemic this classical temperature curve is observed with less and less frequency. When it does occur it is at the fifth day only, when the bronchial-breathing has been present for two or three days; under the creasotal treatment it is observed on the first or second day of the disease, or even on the very day on which the bronchial breathing appears. Personal experimentation with creasotal readily proves that the constant fall in the temperature on the day of the first administration of the drug is no accidental matter. Anyone can verify the fact that the temperature rises again if the use of the drug is stopped too soon. This is an absolute proof of the efficacy of the remedy. The question as to whether it is possible to abort the disease in its very beginning is a difficult one to answer, for if the creasotal is given before the bronchial breathing has appeared the objection can always be raised that there was no pneumonia present at all. Similar benefit is obtained in broncho-pneumonia and pneumonia complicating influenza. As a general rule there is considerable elevation of temperature for several days in broncho-pneumonia; but in a number of cases of the disease the fever is remittent in character without real defervescence. In favourable cases the temperature slowly returns to the normal. Every sudden rise or fall of the thermometer is of bad omen. On the other hand, by the employment of creasotal in the pseudo-lobar form of pneumonic inflammation a rapid and permanent reduction of the temperature can be effected from the beginning. But in the serpiginous form (*forme lobulaire disséminée*), whilst complete apyrexia can be attained it is not always permanent, even when the administration of the creasotal is persisted in. Not infrequently the temperature rises on the next day or the next day but one, but never, especially in children, above 40° C. (104° F.) and a few tenths. The length of the febrile curve is noticeably shortened; it runs for eight days at the most and the febrile movement of convalescence never lasts for from two to three weeks with occasional exacerbations, as is so often the case under other treatment. In a word, it is quite sufficient to compare the fever curve of a case treated with creasotal with that of a broncho-pneumonia to be convinced of the efficacy of the remedy.

Creasotal has a powerful action on the local pulmonary lesions. The smell of the patient's breath is sufficient evidence that it is to a large extent excreted by the lungs. The milder and more recent the auscultatory signs are the quicker and plainer is the action of the drug upon the local lung lesions. In catarrhal bronchitis the results of the administration of creasotal are visible day by day. In from two to three days, according to the intensity of the inflammation, the râles disappear, and the cough and expectoration diminish in amount. In the first stage of pneumonia, when hepatisation is still slight, the bronchial respiration disappears rapidly in a day or two and is immediately replaced by a "râle redux" of short duration. Even in advanced pneumonia creasotal is beneficial. It cannot, of course, immediately effect the repair of the lesions caused by the infiltration and the destruction of tissue, but it causes their rapid cicatrisation and prevents re-infection. The auscultatory signs always disappear more rapidly than usual under its administration. In broncho-pneumonia it occasionally happens that the auscultatory phenomena last for a considerable time after apyrexia has been attained. But they last a much shorter time than is the case with cases treated by other methods. We never observe those foci of moist râles which persist for an indefinite time and resist all manner of treatment. It is very important to note that when the auscultatory signs have disappeared and the creasotal has been taken for a sufficiently long time relapses never occur.

Under the influence of creasotal the patient's general condition improves rapidly *pari passu* with the fall in temperature. If the administration of the creasotal is continued for a certain time after apyrexia is attained the patient incurs no danger of relapse or of tuberculous infection, which so frequently finds a suitable field of growth prepared for it by the acute affections of the respiratory organs. Whilst

creasote itself causes gastritis creasotal improves the condition of the gastro-intestinal tract. As soon as the temperature falls to the normal the tongue becomes clean and there is a vigorous appetite, so that when the patients happen to be children they crave for food as they do after recovery from typhoid fever. As soon as apyrexia appears full nourishment should be given and the creasotal should be discontinued. Neither cardiac affections nor albuminuria contra-indicate the employment of the drug.

From the large number of typical clinical histories collected by Dr. Cassoute, Dr. Corgier, and Dr. Platon from the Marseilles hospitals, the following few may be cited :—

CASE 1.—This patient was a child, three years old, who suffered from chronic bronchitis and was completely cured in three days after the administration of creasotal was begun. For a week the child had had a cough, increased evening temperature, restlessness at night, diminished appetite, and coated tongue. Auscultation showed scattered sonorous and moist râles. The treatment had been emetics, painting with tincture of iodine, benzoate of soda internally, and an enema of 0·25 gramme (four grains) of hydrochlorate of quinine at night. At the end of the week the child's condition was worse and the auscultatory signs had increased. Two grammes (half a drachm) of creasotal (Von Heyden) were then given in four doses in emulsion in the 24 hours. On the evening of the same day the temperature fell and the night following was a better one. Three days later nothing could be found on auscultation and the cough had disappeared. The child took food and slept well and made a good recovery.

CASE 3.—The patient was a boy, nine years old, who suffered from bronchitis complicating influenza, with localised inflammatory focus and threatening broncho-pneumonia. For the previous two days he had had high fever, headache, pains in the limbs, and cough. His temperature was 39·2° C. (105·6° F.) and bronchial râles were heard. He took four grammes (one drachm) of creasotal (Von Heyden) in four doses in the 24 hours. The first dose was administered at 9 P.M.: on the next morning at 10 A.M. the temperature was 37·2° C. (99° F.) and the râles were less numerous. The evening temperature was 37·3° C. (99·2° F.) and the bronchial râles had further diminished. On the next morning there was no fever and bronchial râles were absent. The child was eager for food and the tongue was clean. The dose of creasotal was diminished by one half. By the fourth day nothing could be found on auscultation and the child was pronounced cured. As a matter of precaution 0·5 gramme (eight grains) of creasotal was administered for two days longer. All the cases resembled this typical one. No blisters or emetics, no Kermes mineral, aconite, or opium were employed; only creasotal was used, and the patient made a rapid recovery without any complications.

CASE 5.—This patient was a child, three years old, suffering from pneumonia. The temperature was 39·9° C. (103·8° F.), and there had been chill, pain in the side, and vomiting for about 12 hours previously. Auscultation showed well-localised sounds. Two grammes (half a drachm) of creasotal were ordered at once, to be taken in four doses during the 24 hours. The first dose was given at 9 A.M., the temperature being then 39·9° C. (103·8° F.). At 8 P.M. the temperature was 38·5° C. (101·3° F.); on the next morning it was 38·2° C. (100·8° F.) and at 7 P.M. on the same day it was 37·5° C. (99·5° F.). Apyrexia was thus attained within 48 hours of the beginning of the illness and 36 hours after the first dose of the creasotal. The cough and general condition improved rapidly, as did also the auscultatory signs. During the next few days the temperature remained at 37° C. (98·6° F.). Being alarmed by the dark coloration of the urine the child's parents stopped the medicine. On the next morning there was a violent chill again, with pain in the side and in the evening a temperature of 39·5° C. (103·1° F.). Creasotal was ordered to be repeated, but only in half the former dose—namely, one gramme (15 grains) to be taken daily in two doses. The temperature did not fall under 38·5° C. (101·3° F.), so on the next day 1·5 grammes (22 grains) were ordered to be taken. On the following day the temperature fell to 37·4° C. (99·3° F.) in the morning and 37·3° C. (99·1° F.) in the evening. The bronchial râles diminished. The parents now took it upon themselves to administer only half the amount of the creasotal that was ordered. This was followed on the next morning by an increase of the temperature to 39° C. (102·2° F.), with chills. Then, finally, I returned to the first dose of two grammes (30 grains) daily. On the same evening the temperature fell to 37° C. (98·6° F.) and did not rise again as the creasotal was continued for five days longer in two-gramme (30-grain) doses daily.

CASE 7.—This patient was 39 years old and suffered from pneumonia, with pain (stitches) in the side and chill, but nothing abnormal was heard on auscultation. In the evening there was widespread bronchial breathing over the entire middle region of the right lung and the temperature was 39·9° C. (103·8° F.). 10 grammes (two and a half drachms) of creasotal (Von Heyden) were taken daily in two doses. On the next morning the temperature was 38·2° C. (100·8° F.). The bronchial breathing had been already replaced by the "râle redux." The evening temperature was 38° C. (100·4° F.). The temperature on the following morning was 37·1° C. (98·8° F.). The patient craved for food. The creasotal was continued in half the above dose for five days longer and recovery was complete on the sixth day.

CASE 8.—This patient was a man, 24 years old, suffering from broncho-pneumonia which began on the twenty-first day after a probable attack of influenza. He presented a marked typhoid condition with albuminuria and intense dyspnœa. There was inflammation of the right lung. The temperature was continuously above 40° C. (104·0° F.). The pulse was 104; the heart-sounds were weakened. Spartein was given and was followed by injections of caffein and ergotin. There was violent delirium. Serum diagnosis on the twenty-second day of the disease gave a negative result. A pulmonary form of influenza was suspected. Four days later marked râles were heard. Six grammes (one and a half drachms) of creasotal (Von Heyden) were given daily. In the 24 hours following the first administration of the creasotal there was a sudden fall of the temperature to 38·7° C. (101·6° F.). The delirium continued. On the next day 10 grammes (two and a half drachms) of creasotal were administered. The bronchial respiration over the right lung diminished, whilst new and very extensive bronchial breathing was noted over the left. On the next day the temperature was 37·4° C. (99·3° F.); bronchial breathing had disappeared and in its place there were crepitant râles. The heart-sounds were better and the general condition was much improved. The 10 grammes (two and a half drachms) of creasotal daily were continued. The temperature did not become permanently normal till the fifteenth day of the creasotal treatment. The râles gradually disappeared under continuous and slowly diminished medication.

CASE 12.—This patient was a child, eight months old, who had caught lobular broncho-pneumonia from his father. He was treated from the beginning with one gramme (15 grains) of creasotal daily. Apyrexia set in after 36 hours, but the auscultatory signs did not change and 30 hours later the temperature began to rise again. The dose of creasotal was increased to two grammes (30 grains) daily, and 36 hours later the temperature was normal and the râles had diminished; in two days more these latter had entirely disappeared.

CASE 14.—This patient was a child, three months old, suffering from severe broncho-pneumonia. The temperature fell on the fourth day of the disease after the first dose of creasotal. There were complete apyrexia and recovery by the seventh day.

CASE 17.—This patient was a man 45 years old suffering from broncho-pneumonia. There was rapid defervescence under creasotal and recovery was complete by the ninth day.

CASE 18.—This patient was a woman, 54 years old, who was attacked by influenza in a pulmonary form. There was apyrexia on the first day after the administration of creasotal, six grammes of which she took daily. Recovery was complete on the fourth day.

Radebeul, Germany.

SOUTHPORT MEDICAL SOCIETY.—A society under the above title was constituted at a meeting held recently at the Temperance Institute, Southport. There was a good attendance of gentlemen practising in Southport, Birkdale, and district. A code of laws previously drawn up by a provisional committee was approved and the following officers were elected:—President: Dr. H. W. Vernon. President-elect: Dr. Robert Harris. Vice-President: Dr. Pinkerton. Treasurer: Dr. Baildon. Secretary: Mr. R. M. Littler (29, Hawkshead-street). Committee: Mr. Reinhardt Anderson, Dr. Ashworth, Dr. Barrett, Mr. Baines, Mr. A. J. Popert, and Dr. G. C. Walker, sen. The first meeting of the session will be held in the Albany Galleries on Wednesday, Oct. 11th, when Sir William Mitchell Banks will deliver an address.

ON THE CONSTRUCTION OF OPERATING THEATRES,

WITH A DESCRIPTION OF THE OPERATING THEATRE OF THE NEW GLASGOW CANCER HOSPITAL.

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IF I were asked to say what is at present the most striking feature of modern antiseptic surgery I should have no hesitation in replying that it is the great activity that is being shown in altering and rebuilding the operating theatres of our hospitals. Personally, I have been a good deal interested in this matter as I had recently relegated to me, along with Mr. Andrew Myles, architect, the duty of the planning and furnishing of an operating theatre for the Cancer Hospital that the citizens of Glasgow have seen fit to build for the reception and treatment of patients suffering from this disease in all its stages, operable or inoperable. Recognising that in the case of a public charity there should be no unnecessary expense incurred, I was at the same time desirous that the hospital should have an operating theatre, not only possessing all such admitted requisites as a good steady light and an abundant supply of hot and cold water, but so constructed that all the recognised principles of modern antiseptic surgery could be fully carried out. Surgery, when carried out on a rigid aseptic basis, is laborious, costly, and complicated in its arrangements. Further, it is not possible to put it into practice in a private house, and this is a serious drawback. On the other hand, Lister's simpler but equally safe technique can be practised anywhere, and to provide an operating theatre for it is not such a difficult task; in fact, there is no necessity for a great departure from the ordinary principles that have all along governed the building and furnishing of operating theatres. All that is needed in addition to these is the recognition of the recent advances that have been made in surgery, and their embodiment in the plan of construction. Accordingly, what I aimed at in planning the operating theatre for the Glasgow Cancer Hospital was not so much a bacteriological laboratory as a room that would be simple in construction, well adapted for the work, a model of surgical cleanliness, and not too costly in price.

It may be as well that I now briefly touch upon the points that merit attention in connexion with every operating-room, and which I kept constantly before me, as neglect of them may seriously affect the usefulness and success of the structure.

1. *The natural lighting.*—This should be furnished not only by the windows but also by a roof-light. For the windows the aspect of the theatre should be north. From that direction we get the steady, even light that the artist and the photographer prefer, whereas a southern aspect furnishes too direct and too powerful rays which are a source of embarrassment to the spectators and also to the operator, partly by the glare rising in his eyes and partly by the tissues in the depth of the wound being thrown into shadow, especially if he tries to meet the difficulty by standing between the light and the part where he is working.

2. *The size.*—Various circumstances must regulate this, the main one, of course, being whether medical students and practitioners are to have access to it when operations are being performed. If not, and only the operator, his assistants, and nurses have to be provided for, then no great dimensions are required, the chief point being that there should be room for all the necessary furnishings and a clear space for moving about in. If spectators are to be allowed then there must be a corresponding provision in floor and cubic space for them. Of course, some surgeons lay much stress on the dangers that arise from having spectators present in the operating theatres and various regulations are in force bearing on this point. There can be no doubt that the utility of our hospitals as teaching centres will be impaired if students and practitioners are not to be permitted to be present at operations unless under conditions quite incompatible with their other duties. A system, too, of surgical technique that demands such a condition is also undoubtedly defective.

3. *The floor, walls, and ceiling.*—Seeing that organic material when disseminated through the air in a dry state in the form of dust is the chief danger in operations, it is in this direction that our chief precautions must be taken, and the two principles to work upon are: (*a*) the gravitating power of dust; and (*b*) that micro-organisms cannot be given off into the air from moist surfaces.

(*a*) *The gravitating power of dust.*—This may be facilitated by the entire absence in the operating theatre of all ornate decoration, recesses, and corners. The walls should be free of ornamentation and at their junction with the floor and ceiling they should be rounded off so that they should afford no lodgment for dust. In the same way any woodwork covering electric wires should be similarly shaped. Such an arrangement permits of the dust falling on to the floor and of that thorough cleansing of the theatre which is such an important point to attend to.

(*b*) *That micro-organisms cannot be given off from a moist surface.*—To allow of this principle being acted upon it is essential that the floor, walls, and ceiling should be so constructed that water can be freely used upon them. This can only be done if they are composed of water-tight materials and if proper drainage is provided. For the floor various substances have been employed. The following list includes the chief ones—terazzo, tiles (of various kinds), glass, asphalt, cement, plaster-of-Paris soaked in oil, and linoleum. The general experience seems in favour of terazzo, which is composed of small marble blocks jointed with Portland cement and then polished. The objections urged against the others are that the tiles must have grooves and joints between them and that it is difficult to get them of a material that will not stain; that glass is too slippery; that asphalt is too soft and absorbent; that cement is apt to crack; that the oiled plaster-of-Paris is not durable; and that the linoleum is only suitable for a small operating-room and would not stand rough wear and tear. Favourable as has been the general verdict on terazzo, I confess that I have never been enamoured of it. Its durability is, I think, overestimated. Then the difficulty of getting skilled workmen to lay it down and its great expense are further disadvantages. Glazed tiles are what one would be inclined to select as the most suitable for the floor of an operating theatre, and I understand that they can be made now to overlap so as to do away with joints between them, but, like glass, they are slippery, and the difficulty is to get them of any size, and, if unglazed non-absorbable of blood, acids, and lotions. Some tiles submitted to me as perfectly non-absorbent did not stand the test of a mixture of blood and acid. This fact, together with their costliness, renders them, I think, not well suited for a floor. The material that I believe will be found more efficient than any other and that possesses all the necessary requisites is that known as "granolithic cement," a combination of two parts of granite chips and one part Portland cement. It has the recommendation of being moderate in cost (being one-third the price of even cheap tiles), it has great durability, it has closeness of texture and is consequently quite watertight, and it has no tendency, if properly laid, to crack. By the addition of a little oxide of iron a warm reddish colour may be imparted to it and it does not show any stains conspicuously.

Just as many substances have been used for the floor of operating theatres, so different materials have been employed for the walls and ceiling. Tiles, glass, marble, enamel varnish, and polished white cement have all been tried, while recently at Leeds I saw that the walls of their new operating theatres were being overlaid with a glazed substance called, I think, porcelline. Apart from the presence of joints, tiles and other inlaid substances like squares of glass do very well for walls, but they cannot be placed in the ceilings, and to my mind they cannot compare with the smooth even surface given by enamel varnish on a substance like adamant plaster, which can also be utilised for the ceiling. This adamant plaster takes a fine polish, is quite impervious to water, and is comparatively inexpensive.

The necessary drainage may be provided for by having the floor of the operating theatre sloping inwards to the centre where an open grating is placed, or the floor may slope downwards to one end, where are placed outlets for any water and fluids. Personally I think the floor sloping to one end is the best, for it is not good to have an open grating in the centre of the room—and possibly just under the operating table—as there may be a current of air conveyed by it. Whichever plan is followed the outlet pipe

should not open directly into the drains but over an open grating. There should be no possibility of emanations from the drains entering the operating theatre.

4. *The lavatory arrangements.*—There should be in the operating theatre an abundant supply of hot and cold water. In addition there should be a hose arrangement for the cleansing of the floor, walls, and ceiling, and suitable apparatus for the washing and sterilisation of the hands. This latter should be placed at one side of the room and should have hot and cold water laid on to it. It may take the form of one of the various basins that have been devised, and there should be more than one of these. In connexion with the basins, none of the plumber work should have any direct communication with the drains, and it should be reduced to a minimum. It should also be open and easily got at both for purposes of cleaning and repair. Simplicity in these matters is of prime importance, and I am not sure that such an innovation as the treadle action for working by foot the water-cocks of the supply pipes of the wash-basins is of such great utility considering the ease with which it goes wrong.

5. *The ventilation, warming, and artificial lighting.*—These are three important matters, but perhaps not quite so much so as in the case of rooms which are constantly occupied, and further, they have to be looked at from a different point of view. Taking ventilation first, I believe that what I may term the natural plan by door, fireplace, and window can be made to suffice without introducing any artificial method. All that is needed is a constant change and renewal of the air which is rendered impure by the respiration of those in the theatre. This should be accomplished without any draughts, for all perceptible currents of air should be absent from an operating theatre as they only tend to set in motion the dust with its accompanying micro-organisms. As regards the air admitted by the open windows we know that in cities it contains more micro-organisms than in the country, but that these are largely the spores of fungi. The subject of the warming of the operating theatre is one requiring careful consideration, as great injury to health may accrue to the patient from too low a temperature while undergoing a critical operation. For the purpose of heating an open fire may be employed, the chimney in connexion with it being useful for ventilating purposes. The drawbacks to the open fire are the necessity for the renewal of the combustible, the loss of heat up the chimney, the possibility of smoke coming into the room if the wind outside is high, and the difficulty of regulating the amount of heat. The same objections do not quite hold good in the case of a gas-stove and if any local means are employed this is probably as cleanly and efficient as any other. In every hospital, however, there is a system of collective heating either by hot air, hot water, or steam, and to each room a supply of heat is conveyed, there being an arrangement for regulating the amount entering the apartment. This collective heating should be utilised for the operating theatre. At the same time, it does not do to rely entirely upon it, for systems of collective heating have an awkward way of going wrong, and the operative theatre might be rendered unavailable from such a cause just when most urgently needed. It is always advisable, then, to have in addition an open fire or some form of stove from which heat may radiate if required, hot water be obtained, or in which a cautery iron might be heated. Liable as an operating theatre is to be used at any time, it must be well supplied with artificial light. Brightness, steadiness, and ease in manipulation are features that should be aimed at, and these are found in our ordinary gaslight, which, however, has the drawbacks of heating and contaminating the air of the room, and so being a source of oppression to its occupants. Hence it cannot bear comparison with the electric light, which produces almost no heat, no soot, and no unhealthy gases of combustion, and in the form of the incandescent light is almost perfect. No doubt it is costly, but its advantages in the case of an operating theatre are well worth the additional outlay.

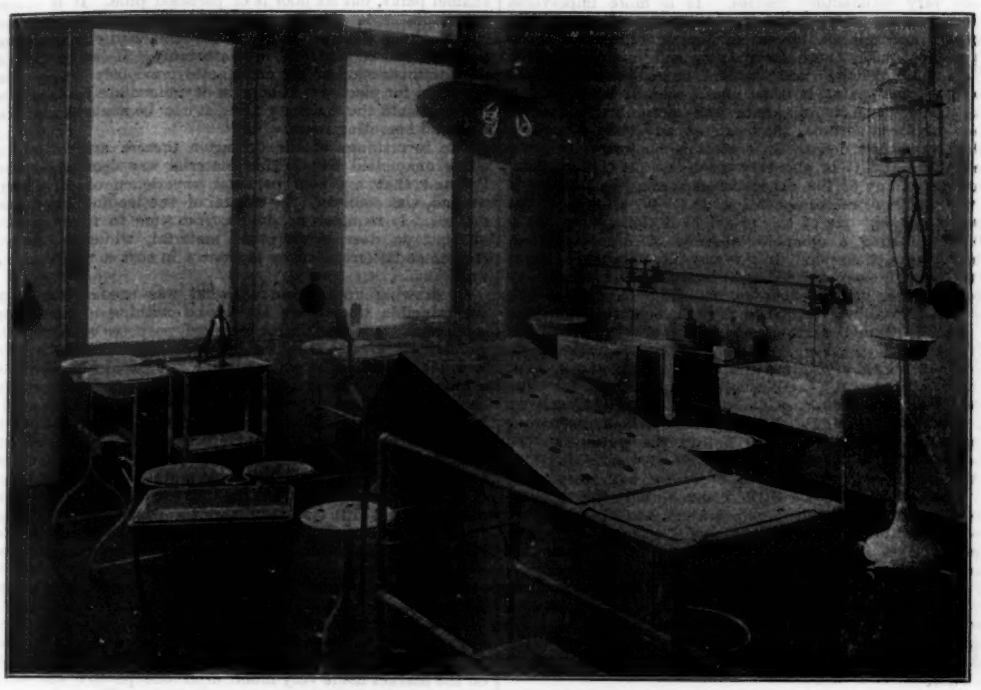
6. *The furnishings.*—Under this heading must be considered not only the articles which are required in an operating theatre but the material of which they should be made, for it is a *sine quâ non* that everything in an operating theatre should be able to bear washing with soap and hot soda solution and not be injured by any amount of water thrown over them. Keeping these objects in view, the substances that have been selected for the manufacture of operating tables and other furnishings have been steel (nickel-plated), brass (lacquered) and brass (nickel-plated), and iron (white enamelled). The general opinion amongst instrument-makers is that iron is the most suitable material and that white enamelled goods are the most satisfactory. Messrs. Down Brothers tell me that tables which are constructed of brass have a certain amount of spring and are not so steady as those made of iron. Again, no matter what material is used, occasional touching up is necessary and this is most easily accomplished with white enamelled goods. They also look best while in use. As far as possible they should be of metallic enamel—that is, they should have been passed through a furnace. Iron merely coated with white enamel paint does not wear well and will not long resist soda and hot water. Glass has also been largely used in operating theatres for instrument tables, lotion trays, basins, bowls, and shelves. It looks well, shows at once any dirt or dust, but has the drawbacks of expense and brittleness. Experience shows that glass tables, lotion trays, bowls, shelves, and slabs are constantly being broken, and the replacing of them is a serious annual expense. In my opinion articles of white enamelled iron or of porcelain are just as serviceable, can be as well cleaned, are not readily broken, and are much less expensive.

7. *Accessory rooms.*—If it can be conveniently arranged an operating theatre should be kept for the actual performance of the operation and there should be one or more accessory rooms for the preliminary preparations. If possible there should be one room immediately adjoining, where the patient can be anæsthetised before being brought into the theatre. Especially is such a room necessary where the operation is performed in the presence of a number of spectators—as, for instance, a large class of students. Although it is necessary to have in the theatre sterilisers for hot water and another near the operating table for boiling instruments and although any steam from them is not harmful as the dampness induced is favourable to the laying of any dust, yet I think it preferable to have a separate room for the sterilising of any dressings or other articles, as by this arrangement there is no need for occupying the theatre until shortly before the operation and it can be left undisturbed from the evening before, thus giving any dust in it ample time to settle.

THE OPERATING THEATRE OF THE GLASGOW CANCER HOSPITAL.

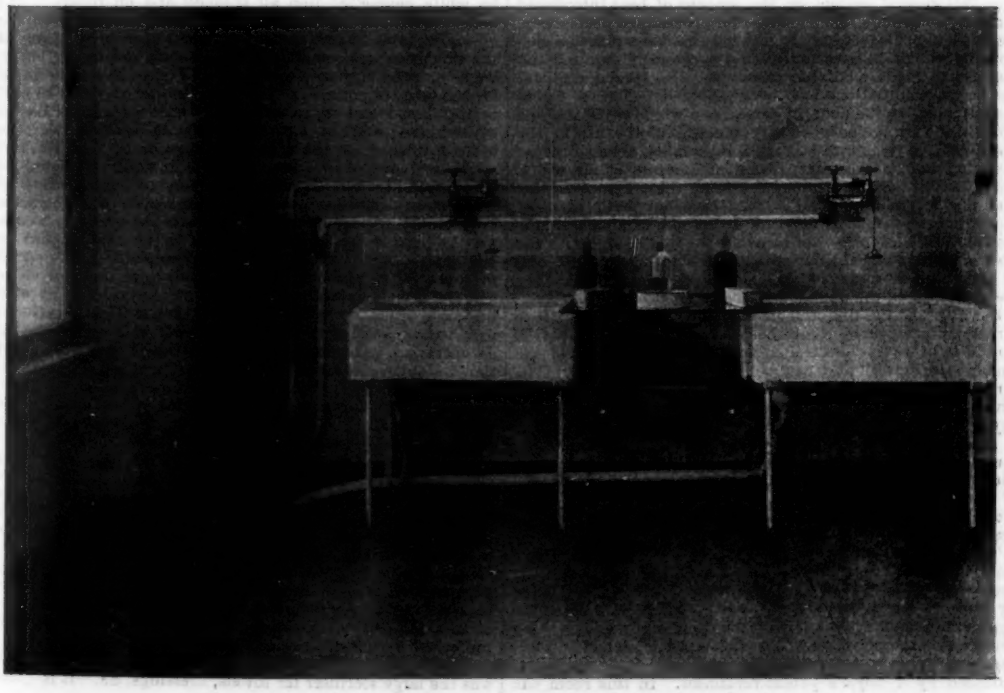
I will now briefly describe this operating theatre, in the arrangement and construction of which the above principles had careful consideration. The situation chosen for it was on the upper floor of a new building that was erected between the hospital proper and the residence for the nurses. This arrangement placed it well away from the wards, thus avoiding all disturbance of the patients, and it furnished it not only with plenty of light from the sides and roof, but also with that northern aspect that is so desirable. In shape the theatre is almost square, being 22 feet in length and 18 feet in width. The walls generally have a height of 12 feet, while in the centre of the roof is a large cupola for lighting purposes. In the walls are side lights furnished by four windows, one looking west and the other three north. These windows are eight feet four inches in height and three feet six inches in width and they have a transom near the upper end dividing them into an upper smaller and a lower larger portion, both of which open on pivots (see Fig. 1). The floor is concrete, covered by a layer one and a half inches thick of granolithic, a mixture of Portland cement and ground granite. It is tinged a terra-cotta colour—as less likely to show any blood stains and as giving a warm appearance to the room. To allow of drainage the floor has a fall towards the northern end of about six inches, and it is furnished at intervals throughout its length and breadth with grooves which meet one another at right angles. At the lowest part of the floor is a gutter into which the longitudinal grooves enter. This gutter is in communication by two short channels with two gratings, each of which leads into an iron pipe which discharges itself outside over another open grating. In this way there is no actual communication between the air in the operating theatre and the drains of the hospital. I advocated this granolithic flooring as I was satisfied that it would be quite as waterproof and non-absorbing as was needed for our purposes (and considerable use of it has confirmed this view), while it would be quite as durable as terazzo or tiles and would only be a third of the cost.

FIG. 1.



The Operating Theatre of the Glasgow Cancer Hospital.

FIG 2



Dent and Hellyer Sinks in the Operating Theatre of the Glasgow Cancer Hospital.

The walls and ceilings are of adamant plaster, which is covered with four coats of enamel paint. Adamant is a patent material which has been in use for several years and has yielded very satisfactory results. It is more impervious to water than the ordinary cements. It may be smoothed and glazed by a facing of chromolith, but this is not really necessary, as with rubbing it takes on a fine polish, and when coated with several coats of enamel paint it is as non-porous as tiles, while, unlike them, it has no joints and presents a smooth, glazed, uniform surface, that can at any time be easily brushed or washed down. In cost it is not one-fourth the price of tiles and it is also very much cheaper than marble, porcelline, or any of the expensive cements. In addition it has the further recommendation that it allows of the thorough carrying out of the principle of there being in the walls and ceiling a complete absence of ornamentation, joints, recesses, or corners. In this way there are no obstacles to the thorough cleansing and sterilisation of the theatre.

For the cleansing and disinfection of the hands there are placed on the right side of the theatre, near the windows, two glazed enamel earthenware sinks of the Dent and Hellyer pattern (see Fig. 2). The interval between them is bridged over by a glass slab, on which stand nail-brushes, soap, and the usual disinfectants for the hands. From each sink an outlet pipe is carried, and by their junction one single pipe is formed which discharges its contents by an open mouth into the gutter at the lowest end of the floor (see Fig. 2). Above each sink is a junction-tap for hot or cold water or for both combined. The taps are placed some little distance above the sinks so as to allow of the hands being washed beneath them, as there is no doubt that the correct way of washing the hands for sterilisation is in running water and not in basins of water that at once become dirty. The sinks are furnished with chains and plugs so that they can be filled with water if so desired, as they are large enough and deep enough to allow of the immersion of the hands, forearms, and elbows. For the cleansing of the theatre there is placed beside the hand sinks a separate junction-tap fitted for the attachment of a hose.

The warming of the theatre is accomplished by two radiators, which are of an American pattern, and are in connexion with the collective system of heating by hot water which is in vogue in the hospital. By certain valves and stopcocks each radiator can be entirely shut off, if necessary, from this general system, or the amount of heat introduced can be regulated. In addition, there is an open fireplace on the left hand side (see Fig. 3), and in it has been placed a gas-stove which can be used for heating purposes if required and can also be made available otherwise. No special artificial system of ventilation has been adopted. The so-called natural plan by the door, chimney, and windows is the one relied on. By it the necessary renewal of the air in the room can be accomplished and it creates none of those powerful, and, as I believe, harmful currents of air which should not find a place in an operating theatre, or even, for that matter, in a surgical ward. Although both parts of each window open it is only the upper and smaller portions that are made use of, so as to avoid draughts; and with the view of minimising the currents of air entering by them and of excluding as much as possible all organic material they are protected on the outside by screens of fine gauze.

For artificial lighting the electric light is employed. It is furnished by a central electrolier of three lamps, each of 150 candle power. The electrolier hangs from the centre of the cupola (see Fig. 3), and can be moved up and down. The three lamps are under a large reflector, the angle of which can be varied, while a turned-up rim prevents any dust from falling down on to the operating table. If a light is wanted low down, say on the operating table, there is a moveable lamp which can be put in connexion with the central electrolier by removing temporarily one of the lamps. In addition, at several points in the walls plugs are provided for furnishing side-lights if they are required.

Two accessory rooms are attached to the theatre. One, a small one, contains a large steam steriliser for sterilising dressings, towels, sheets, and operating aprons. It is heated by gas and has so far given every satisfaction. When the apparatus is opened to allow of the enclosed dressings being dried an escape of steam takes place, and to get rid of this the room is provided with a special ventilating shaft surmounted by a Boyle's patent ventilator. In this room can also be stored dressings and other materials. The second room is larger than the other and is opposite to the theatre. Its walls and ceilings are of adamant plaster coated with enamel paint, but its floor is of polished pine. It is heated by a radiator, is also furnished with an open fireplace, and has in it the electric light. It is of such dimensions that two beds can be placed in it comfortably. It can be used for the administration of the anæsthetic previously to the operation, and for placing patients in it immediately afterwards, while, should the necessity arise, it can be made available as a second operating room.

The furnishings of the operation theatre are entirely of white enamelled iron. This material was decided on when I found that my own personal experience of it, though limited, was confirmed by several of the leading instrument makers. It requires, no doubt, from time to time touching up, but so does every other material, while it has the recommendations of being moderate in cost and of looking well.

In drawing up the list of what was needed I went on the principle that there should be nothing in the theatre save what was needed for surgical purposes and that the simpler everything was the better. The following articles were obtained: (1) operating table and stool with elevating screw; (2) instrument cabinet; (3) two instrument troughs on trollies; (4) two instrument tables, three feet and one and a half feet long respectively; (5) three double wash-basins with moveable basins; (6) five single wash-basins, four small and one large, with moveable basins; (7) three towel hangers; (8) a box for soiled dressings; (9) a glass irrigator on tripod stand, with small basin for holding the tubing and nozzle of the irrigator; (10) two sterilisers for water; (11) one large steriliser for towels, dressings, &c.; (12) one steriliser for instruments; (13) one bandage and dressing-box; (14) one bottle and dressing-stand with shelves; (15) six engraved glass reservoir jars for lotions, with glass stopcocks; (16) one combination lotion trolly for the different things required for the sterilisation of the skin; and (17) four chairs. A large number of the above articles, such as the tables and trollies for instruments and the wash-hand basins, are placed on the market made very much after one pattern and there is no choice or selection as regards them. The only points stipulated about them were that they should be on rollers, and that the trays or troughs were to be of white enamelled iron and not of glass. So with the instrument tables. There were to be no glass shelves or tops for them. They were to be white enamelled iron all through and on rollers. The article that called for the most consideration was the operating table. I confess that I am not enamoured of any of the expensive and complicated tables that are at present in vogue and the only three points that I laid down as essential for the table to possess were these: (1) that it could be used in the Trendelenburg position; (2) that it could be heated while in use; and (3) that the cost should be moderate. The table furnished by the Argyle Rubber Co., of Glasgow, met all these requirements and possesses in addition other good points (see Fig. 4). It is made entirely of white enamelled metal (iron), with head, body, and leg rests. It is 68 inches long and 36 inches high. The body plate is perforated, and to this is fixed a framework which holds two heating pans for hot water. About two-thirds of the top plate can be raised in a sloping position by a single lever to an angle of 40° to suit the Trendelenburg position, the heating pans rising even in this position with the top plate. It should be mentioned that these pans can be easily taken out, if required, during an operation, to be emptied or filled. Only two of the legs of the table have castors, so that it is in this way prevented from sliding. When in the Trendelenburg position the table may be made into a gynæcological chair by using the sloped part as a back rest, and fixing the knee-rests at the head of the table instead of at the other end.

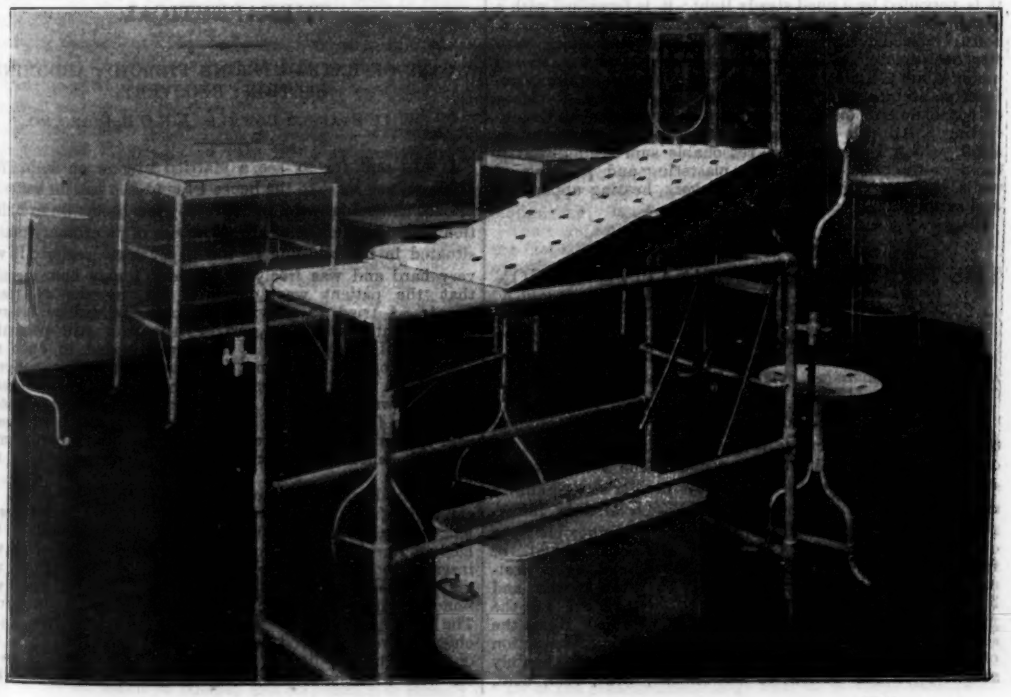
The instrument cabinet selected (see Fig. 4) has nothing special about it. As it was to stand in the operating theatre it was of as moderate dimensions as possible. It contains the usual adjustable shelves of plate-glass and has double plate-glass doors and plate-glass sides, so that everything in it is visible and any instrument wanted can be at once seen. One part of it has been furnished with small brass rods and pegs so that forceps can be hung up by their handles. This is a convenient arrangement and saves space. Being made of iron it is of considerable weight, but being on rollers it can easily be moved about.

Another article that required consideration as to selection was the large steriliser for towels, dressings, &c. It is quite

FIG. 3.

Open Fireplace in the Operating Theatre of the Glasgow Cancer Hospital.

FIG. 4.



Operating Table in the Glasgow Cancer Hospital furnished by the Argyle Rubber Company.

possible to do without this, but it is useful in many ways in a hospital, and its use safeguards an operation in many points where error may creep in. The one chosen was the one devised by Lautenschläger of Berlin, and is furnished with two copper cylinders, one inside the other. In the centre one are placed the dressings, contained in two round boxes (cartridge cases they are sometimes termed), with apertures in them which permit of hot steam permeating their contents. This steam may be generated in the instrument itself, as is usually the case, or it may be obtainable from some other source and may be forced in. In either case there is an arrangement for condensing the vapours escaping from the apparatus in a cooling vessel which stands beside it. I find from the matron of our hospital that during the period it has been in use this steriliser has worked very well.

I considered it advisable to provide special apparatus for furnishing a liberal supply of sterilised hot and cold water for washing wounds and for other purposes during operations, so that I could be sure that only water previously sterilised by boiling would come into contact with the field of operation. This is done by the use of two copper sterilisers heated by gas and holding several gallons of water (see Fig. 3). Two are necessary as cold water is sometimes needed.

It is not possible to exclude septic cases from an operating theatre, but when they are within its walls every care should be taken that they do as little harm as possible. Hence it is very necessary to have included in the furnishings a box with well-fitting lid for all soiled dressings to be at once placed in so that no discharges may fall on to the floor. The box selected is seen in Fig. 4 and is of a size to go underneath the operating table. It is on rollers so as to allow of its being easily moved about and, if necessary, removed from the theatre.

The only other article I would allude to is the bottle and dressing stand which is seen in Fig. 3. It was made by Gardner and Son of Edinburgh and is very useful. On its shelves can be placed various articles, and its top, which is protected by a rail, can be made available for the glass reservoir jars for lotions, thus doing away with the need of a shelf for them to stand on.

Such, briefly, is a sketch of the operating theatre at the Glasgow Cancer Hospital, and some months' experience has shown that it possesses all the necessary requirements. It has a warm, pure atmosphere, which is free from dust; it is pervaded by a good steady light; it is furnished with a plentiful supply of pure hot and cold water; and it is so constructed and equipped that it is quite in keeping with that one principle which, according to Schimmelbush, should underlie the planning and arranging of every operating room from an aseptic point of view—viz., the provision of plenty of space and of every convenience for cleansing and disinfecting. All this has been obtained at a cost of under £250, which I regard as a reasonable sum seeing that it includes the price of the floor, plastering and painting of walls, electric lighting, plumber's work, heating apparatus, and surgical furniture.

Glasgow.

THE PECULIAR AGGLUTINATIVE ACTION OF BLOOD SERA UPON LIVE SPERMATOZOA.

By ROBERT L. PITFIELD,

ASSISTANT BACTERIOLOGIST, STATE BOARD OF HEALTH, PENNSYLVANIA.

THE lysogenic action of the various normal and immunised sera upon bacteria and living animal cells, as blood corpuscles, is a familiar phenomenon. The action can be studied in various ways, chiefly by Pfeiffer's well-known method of injecting bacteria and serum already immunised into the peritoneal cavity of a guinea-pig; or else by studying the effects, on the other hand, of foreign serum upon the cells of an animal by a post-mortem examination with sections, &c. As motile and highly specialised cells spermatozoa seem ideal for the purpose. I have used spermatozoa obtained from the seminal vesicles of various animals, studying the action of foreign sera upon them. These cells are acutely sensitive to the action of desiccation, heat, cold, acid, or alkali in excess, also to sugary syrups, glycerine, metallic salts, protoplasmic poisons, and in general substances which abstract water from the protoplasm.

If the seminal tubes of a guinea-pig (killed by chloroform) be opened and the contents examined microscopically there will be seen a dense mass of vibrating spermatozoa. If the fluid be diluted with 0·6 per cent. salt solution at 37° C. these cells exhibit active free motion. If into this mixture a drop of the blood of a guinea-pig be admixed a curious phenomenon is to be noticed. The spermatozoa head for the leucocytes and cling to them, meanwhile lashing their tails violently. About the middle piece of the spermatozoa the red cells seem to cling as the place of least motion. Some of the cells head directly for the red corpuscles and adhere to them with the head. In a few minutes all of the organisms become clumped, but they may exhibit lashing motions for at least an hour if kept at 37° C.

If a drop of the serum of a sheep be added to a drop of the suspension of spermatozoa in salt solution the cells become perfectly quiet in 20 minutes without any agglutination. If a drop of human serum be added to the same guinea-pig spermatozoa suspension active motion will cease and agglutinated clumps will form; at the end of five minutes action will have ceased. If the serum of a cat be mixed with the spermatozoa the action is the same as with the human serum only it is slower, 18 minutes. If the spermatozoa of dogs be mixed with the sera of sheep there will be an immediate paralysis of the cells and in two minutes they will be clumped and perfectly quiet.

Controls of the spermatozoa of dogs and sheep in salt solution exhibited active lashing movements at the end of six hours. A moderate amount of lysogenesis was noted in some instances, but it was not marked. The interesting fact seems to be that live motile animal cells act toward foreign sera as typhoid bacilli act toward typhoid serum, or any motile organism toward immunised serum. The spermatozoa of a guinea-pig immunised against diphtheria toxin were as susceptible to the action of dilute toxin as were the unimmunised spermatozoa in one experiment.

Philadelphia, U.S.A.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF EXTRA-UTERINE FIBROID; ABDOMINAL SECTION; RECOVERY.

BY C. STANSER BOWKER, L.R.C.P. EDIN., &c.

I WAS sent for to see a married woman on Feb. 17th, 1898. When I got to the house I found the patient suffering intense abdominal pain, not specially localised. On examination I found a tumour of about the size of an ordinary orange situated in the mid-line in the hypogastric region; it was very hard and was freely moveable. I may here mention that the patient was enceinte, six months or thereabouts. I tried to alleviate the pain by various internal medicaments but to no purpose, the pain still persisting in spite of treatment. I therefore decided to open the abdomen on the following day (the 18th). The patient's version of the matter was that she had never discovered anything wrong until she had been pregnant about a month, when she found a lump in the left groin which gradually rose higher and higher until it reached the above-named position, when she sent for me in consequence of the intolerable pain.

The abdomen was opened on Feb. 18th. An incision of from about two and a half to three inches in length was made immediately below the umbilicus in the median line and down to the peritoneum. A director was inserted and the peritoneum was slit up. The tumour was grasped, a ligature was applied, and the offending mass was removed, this being connected with the fundus of the uterus. The abdominal cavity was washed out and thoroughly cleansed from all blood and the wound was stitched up, the operation lasting barely ten minutes. The patient went on well without any interruption until the 20th when

labour pains set in. I immediately dilated the os and applied a small pair of forceps and delivered to prevent the patient using any undue force. From this time on there was a rapid recovery, the abdominal wound healing by first intention, the patient being allowed to leave her bed on the tenth day after the operation. The temperature never rose above 100° F.

The only feature in the case which I think may be interesting to readers of THE LANCET is the intense pain complained of. Whence did this pain originate? The tumour was an extra-uterine fibroid connected with the fundus uteri, but not, in my opinion, pressing on any nervous centre likely to cause so much pain as the patient evidently experienced.

Ilford.

ARSENIC AS AN EXTERNAL IRRITANT.

BY A. MILSON ROBERTS, M.R.C.P. IREL., &c.

ON May 18th a man, a gardener, called upon me with an erythematous redness and considerable puffiness of both legs and feet nearly as high as the knee. He also complained of sickness and diarrhœa and his tongue was covered with a slimy yellow fur. Under simple treatment he rapidly recovered. The skin of the legs and feet desquamated. Just a month later he came to me again in rather a worse condition. There was a greater amount of erythema and the stomach and bowels were in a most irritable condition. Having in mind the violet powder poisoning cases with which I was connected in 1878,[1] and being unable to account for the recurrence of the symptoms, except on the assumption of irritant poisoning, I elicited after some cross-examination that he had been using a weed-killer and for two or three days on each occasion before the symptoms arose his boots and trousers had been thoroughly saturated with it. A rough analysis showed this weed-killer to contain a large quantity of arsenic.

Little Hadham.

A CASE OF RETENTION OF URINE CAUSED BY RETAINED MENSTRUAL FLUID.

BY OLIVER SMITHSON, M.R.C.S. ENG., L.R.C.P. LOND.

SOME weeks ago I was called to see a girl, aged 16 years, who could not pass urine and who was in great pain. On examining the patient I found the abdomen greatly swollen and could feel the bladder almost as high as the umbilicus. A draught of tincture of hyoscyamus and bicarbonate of potassium was administered and the girl put into a hot bath. This proving ineffectual, I passed a catheter and drew off a large quantity of urine, the pain being at once relieved. Whilst passing the catheter I felt a tense, fluctuating swelling projecting between the labia. The symptoms returned shortly afterwards and necessitated the use of the catheter at regular intervals. Finding no cause for the retention I made another and more careful examination and then found that the swelling to which I have referred was an imperforate hymen bulging forward between the labia. With strict antiseptic precautions I incised the hymen, which was very thick and leathery, and let out a quantity of menstrual fluid of very dark colour and extremely viscid in character. After this there was no further trouble, and the patient is now in excellent health. The retention was evidently caused by the great pressure of the menstrual fluid. The patient has several sisters older than herself who all started menstruating when about 13 years old, so that in all probability the menstrual fluid had been collecting for some considerable time.

Grays.

[1] THE LANCET, Sept. 21st, 1878, p. 420.

SANITARY MATTERS AT TRURO.—At the meeting of the Truro City Council held on August 21st several of the members drew attention to the disregard of sanitation in the city, especially in the lower parts of it. It was stated that crude sewage was discharged into the river, and the town clerk mentioned that he had received complaints as to the stench from the river. A member said that in a short time steps would be taken to compel the corporation to remedy the present state of affairs.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

WESTERN OPHTHALMIC HOSPITAL.

A CASE OF EPITHELIOMA OF THE CONJUNCTIVA; ENUCLEATION.

(Under the care of Mr. ARTHUR W. WHEATLY.)

THE comparative rarity of seen and reported cases of malignant new growths affecting primarily the visible front of the eyeball appears to fully justify the narration of the following case. It is somewhat strange that after a duration of more than three years no involvement of the lymphatic glands in front of the ear should have been present; but the malignancy of epithelioma of the conjunctiva varies greatly in different cases.

A hale old man, about 70 years of age, was admitted into the Western Ophthalmic Hospital under the care of Mr. A. W. Wheatly on May 26th, 1899, for the treatment of a bleeding tumour of the left eye. According to the patient's statement it must have been three years previously that it was first noticed that there was "something wrong with the eye," but he took little notice of it and only latterly had it proved a source of trouble to him. The main complaint on admission was that the growth was evidently increasing somewhat rapidly in size, that it was sometimes the seat of pain, and that occasionally it bled, but the pain had always been bearable and the hæmorrhage had never been large.

On admission a warty growth was seen invading the outer fourth of the corneo-sclerotic region of the left eye. It was somewhat triangular in shape, the base being limited behind by the insertion of the left external rectus, above by the lower tendinous fibres of the superior rectus, and below by the external fibres of the inferior rectus, whilst the apex extended partly over the cornea and the pupil, and (in consequence of internal deviation of the eye) occluded the latter for practical purposes of vision. The growth was in all parts firmly adherent, its surface was papillomatous and friable, and it bled easily. It was densest in the region of the sclerotic adjacent to the cornea, measuring one-sixth of an inch in thickness in this situation. From here on June 2nd Mr. Wheatly removed a portion of the growth for microscopical examination, and having submitted it to a well-known authority received in due course the report which confirmed his worst suspicions as to its malignancy. It proved to be a squamous-celled epithelioma.

The case was watched for a time, but notwithstanding the fact that no glandular infiltration could be detected the growth was manifestly increasing and delay seemed to be dangerous. Enucleation was therefore advised and the patient's consent having been obtained Mr. Wheatly performed the operation on June 16th, removing also such tissue as appeared to be in dangerous proximity.

Remarks by Mr. WHEATLY.—I am much indebted to Mr. C. Devereux Marshall (pathologist to the Royal London Ophthalmic Hospital, Moorfields) who saw the patient prior to enucleation and who has since made a careful macroscopic and microscopic examination. He confirms the prior report and states that the growth is "a squamous-celled epithelioma which starts in the epithelium at the corneo-scleral junction and can be traced and shown to be continuous with that covering the cornea. The growth is much infiltrated with small round cells and this is a secondary inflammatory change."

ROYAL INFIRMARY, LIVERPOOL.

A CASE OF PUERPERAL SEPTICÆMIA IN WHICH ANTI-STREPTOCOCCIC SERUM WAS USED WITH SUCCESS.

(Under the care of Dr. T. B. GRIMSDALE.)

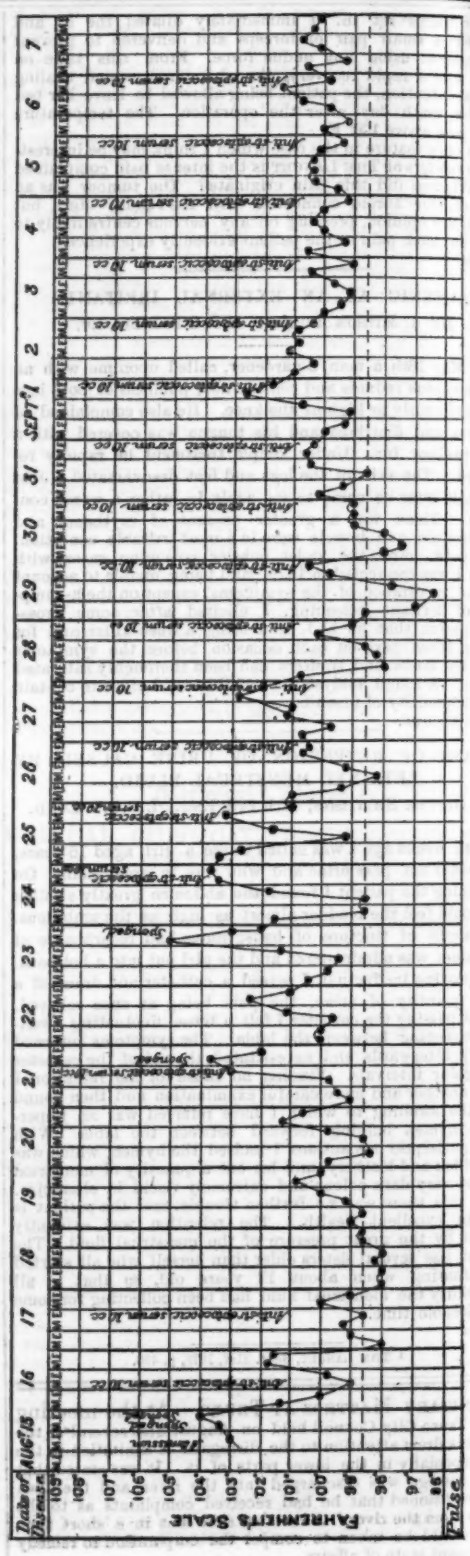
UP to the present time a large number of cases have been published in which anti-streptococcic serum has been

employed, but in many the diagnosis of streptococcic septicæmia has been doubtful because the bacterial examination has been imperfect, and therefore the treatment by anti-streptococcic serum, whether followed by recovery or by death, has added but very little to our therapeutic knowledge. In Dr. Grimsdale's case, reported below, the diagnosis was certain and the use of the serum was obviously beneficial, so that after two doses the injections were discontinued, even though the cocci were still present in the blood. The injections when resumed were continued until streptococci had entirely disappeared from the blood. In all the patient received 170 cubic centimetres of the anti-streptococcic serum without showing any bad symptoms which could justly be attributed to it. No stronger evidence could be required of the harmlessness of the injections. The accompanying temperature-chart shows very graphically the course of the disease.

A woman, aged 35 years, had an easy labour; 48 hours afterwards she had a rigor. Her medical man douched out the uterus 12 hours later and this was followed by a temporary fall in the temperature. When the temperature again rose the uterus was douched a second time; the improvement being only transitory the uterus was curetted. The fever still continued and 10 cubic centimetres of anti-streptococcic serum were injected into the tissue of the abdominal wall by means of two punctures. This injection was performed on the ninth day after the confinement. At this period Dr. Grimsdale saw the patient for the first time. She looked excited and rather preternaturally bright; her face was pinched but flushed. The temperature was 104° F. and the pulse was 120. No pain was complained of and there was no tenderness on pressure over the abdomen. The uterus was large and reached three inches above the pubes; no peri-uterine swelling was to be felt by the vagina. The uterus was quite moveable. Two hard, rather tender swellings were present on the abdominal wall at the seat of the injections of the serum; both these suppurated at a later period. Some blood was collected from the arm of the patient for bacteriological examination. She was removed on the following day (August 15th) to the Royal Infirmary.

On admission the temperature was 103° and the pulse was 114. The streptococcus was found in the blood. On August 16th and 17th 10 cubic centimetres of anti-streptococcic serum were injected into the subcutaneous tissue of the flanks. On the 18th the patient's temperature ranged between 98° and 98·6° and the pulse between 66 and 80 per minute. Her general condition was much improved, the excitement and anxiety were gone, and she appeared to be convalescent. Dr. Grimsdale stopped the serum injections but took some blood for examination; subsequently the streptococcus was proved to be present in this specimen of blood. On the 19th and 20th the temperature gradually rose until on the 21st the fever was as severe as when she was admitted. The temperature was 103° and the pulse was 120. The excitement, the anxiety, and the pinched expression had all returned. On the 24th, the fever still being high, 10 cubic centimetres of serum were injected into the flank and similar injections were made daily until Sept. 6th when it was found that streptococci did not grow in the blood. The injections were then discontinued entirely. The temperature at this time was raised, being fairly persistently two or three degrees above the normal, but it gradually fell and in the course of a week became slightly subnormal and remained so until the patient was discharged from the infirmary. The chart shows the course of the illness and the effect of the treatment on the temperature.

Remarks by Dr. GRIMSDALE.—Many cases have been recorded from time to time of the treatment of puerperal septicæmia with anti-streptococcic serum, some being successful and some otherwise, but some of these cases are so complicated that they are of little value as evidence in favour of the serum treatment beyond proving that the injections of the serum are comparatively harmless. Although the above case occurred some time ago it appears to me to be more convincing evidence of the value of the anti-streptococcic serum in streptococcic infection than any which I have met with since; and although I have much faith in the serum myself I have not had any other case so uncomplicated to bear testimony in favour of the anti-streptococcic serum. After the patient came under my care no treatment was directed against the uterus, and with the exception of small doses of quinine daily no treatment other than the injections of anti-streptococcic serum was adopted.



The patient was in hospital for seven and a half weeks; this appears to me to be a short period considering the nature of the case. I have little doubt in my own mind that the course of the disease would have been very materially shortened if the injections had not been stopped on the 18th. When I found that the temperature and the pulse were normal and that the general condition of the patient was satisfactory on the 18th I made the mistake of assuming that the streptococci had disappeared from the blood and stopped the injections of serum. As a matter of fact streptococci were present in the blood that was taken from the patient on the 18th, as was discovered in due course. In any future case I shall certainly be guided by the result of bacteriological examination when considering the advisability of ceasing the injections of serum rather than by the appearance of the patient. This return of the fever after the serum injections were stopped is very interesting. After three injections the temperature became normal and remained so for 24 hours; it then gradually rose until on the third day it reached 103°. This looks as if almost all the streptococci in the blood had been got rid of, but as the injections were discontinued too soon the micro-organisms again got to a head in two days or so and the symptoms were again reproduced, to be overcome a second time by the renewed injections of serum. The immediate effects of the injections upon the condition of the patient were excellent. There was no doubt that the severe headache, the fear of impending death, and the great despondency were all removed when the injections were used. On Sept. 1st, towards the end of the course of treatment, the patient suffered considerably from urticaria. A little later she also complained much of severe pains in the limbs. These pains were not situated in the joints, but seemed to follow the course of the limbs; the muscles were very painful when pinched. These pains came on suddenly and lasted about 14 days and gradually disappeared. My own feeling with regard to this case is that the woman most certainly owed her life to the anti-streptococcic serum.

Reviews and Notices of Books.

Encyclopædia Medica. Under the General Editorship of CHALMERS WATSON, M.B., M.R.C.P. Edin. Vol. I. Abdomen to Bone. Edinburgh: Wm. Green and Sons. 1899. Pp. 579. Price 20*s.* net.

THERE being no preface to this volume we are left to form our own conclusions as to the nature and scope of the work. It is apparently an attempt to place in one publication a series of papers by different writers on all branches of medical science—medicine, surgery, gynæcology, and all the special branches; and judging from the contributions in the first volume it is intended principally for the busy general practitioner. If this assumption be correct we can speak well of the first volume although we certainly cannot give all the articles unstinted praise. They are good, bad, and indifferent. Many of them show signs of haste in their preparation—they are incomplete and do not impart as much information as do the chapters on those subjects in the more modern text-books.

There is an excellent plan adopted, which might well be copied by somewhat similar publications, of placing a short index at the commencement of each article. This greatly facilitates reference.

One of the best series of papers in this volume is that on Anæsthesia and Anæsthetics. Dr. Dudley Buxton writes on the Physiology of Anæsthesia and Minor Anæsthetics; Dr. Alexander Ogston on Chloroform; and Mr. T. Pridgin Teale on Ether. Dr. Buxton's remarks on the general physiology of anæsthesia are most interesting. He shows that it has now been proved that the corpuscles are capable of conveying such gaseous bodies as nitrous oxide and carbonic dioxide to and from the nervous tissues; and that anæsthetics act directly upon nerve centres, and not, as was formerly held, as mere replacers of the oxygen of the blood. In describing the use of nitrous oxide scarcely sufficient attention is given to the advantages of administering oxygen with the nitrous oxide, especially in dental practice. Another good paper is that on Aneurysm by Mr. Stanley Boyd. Especially noteworthy are the sections on Progress and Termination and on Treatment. It may be mentioned here that a little confusion is caused to the reader by the title of the paper—Aneurysm; in it are only included those forms of aneurysm which come strictly under the observation of the surgeon. For "Thoracic Aneurysm" we have to look under "Aorta." We think it would have been more convenient if this subject had immediately followed Mr. Boyd's paper.

A very comprehensive paper is that by Dr. Fortescue Fox on Balneology and the writer has condensed much information into a comparatively small space. After a brief survey of the history of the science and the use of the baths in early times Dr. Fox discusses the "action of baths." He maintains that in whatever form applied baths exert their action solely upon the skin—that is to say, they take effect directly upon the skin and through the skin indirectly upon other parts of the body. This theory is now generally held to be correct in contradiction to the old one that the chief value of a mineral bath was attached to the cutaneous absorption of its ingredients. The author lays stress on a full knowledge of the physiology of the skin as a foundation for the correct explanation of the therapeutical results of baths and discusses at length the effects of heat, moisture, and pressure upon the body. A very good summary is given of the chief mineral waters and baths throughout the world.

Dr. Patrick Manson writes an interesting article on Beriberi. He mentions the various theories as to its causation and favours the hypothesis that it is due to a toxin which is the product of a saprophyte living outside the human body, certain conditions of temperature, moisture, and of an organic culture medium being necessary for its proliferation.

Another contribution likely to attract attention is by Dr. L. W. Sambon on Blackwater Fever. The editor was fortunate in being able to secure his services. His arguments in reference to the etiology of the disease are well expressed and he comes to the conclusion that there is sufficient evidence to show that blackwater fever is a distinct morbid entity, that it is caused by a specific parasite, that this parasite is a hæmatozoon belonging to the class of protozoa, and that if not identical with pirosoma bigeminum it certainly is closely allied to it.

Mr. F. A. Southam writes on the Injuries and Diseases of the Bladder. The section on injuries is rather too condensed, but the principal diseases—cystitis, tubercle, and ulceration—are well described, as are also the various forms of calculi which may be met with. One of the most complete articles in this volume is that on the Physiology and Clinical Investigation of the Blood by Dr. T. H. Milroy who has evidently taken much pains with its preparation. The methods of clinical examination are well described and the more modern classification of the varieties of leucocytes is duly set forth and their clinical significance is briefly commented on, but the reader is referred to future articles for further information. We do not think this plan free from objection; it would have been more convenient to have had the conditions leucocytosis and leucocythæmia under the one heading Disorders of the Blood, with cross references if necessary under the individual diseases.

Mr. Alexis Thomson contributes an excellent article on Diseases of Bone. The classification is a good one and we believe original:—1. Bacterial diseases—pyogenic, tuberculous, syphilitic. 2. Parasitic diseases—actinomycosis, mycetoma, hydatid cysts. 3. Trophic diseases—including rickets, scurvy-rickets, osteomalacia, osteitis deformans, leontiasis ossea, fragilitas ossium, and other lesions in

diseases of the nervous system. The adoption of this classification renders the contribution easy of reference—an important matter in publications of this nature. Amongst other articles worthy of perusal in this volume are the following: Acromegaly, by Dr. J. Dreschfeld; Actinomycosis, by Dr. Sheridan Delépine; Adrenal Glands, by Dr. Rolleston; Angina Pectoris, by Dr. Lauder Brunton; Ascites, by Dr. H. P. Hawkins; and Infantile Atrophy, by Dr. H. Ashby.

Hispano-American War Correspondence. Being Letters from Dr. NICHOLAS SENN, Chief Surgeon United States Volunteers. Chicago: American Medical Association Press. 1899. Pp. 278.

THIS volume, very fully illustrated, consists of articles and letters reprinted from the Journal of the American Medical Association. These articles give an account of the Spanish-American War from the medical point of view. We see that the candidates for medical service in the United States Army undergo a very searching physical and professional (practical) examination; and in this instance the results were very satisfactory. Among the officers and enlisted men the most frequent causes of rejection were hernia, varicose veins of the lower extremities, heart disease, imperfect chest expansion, loss of teeth, and flat-foot; it is a remarkable fact that out of nearly 10,000 men of ages varying from 18 to 45 years 22 per cent. presented a condition of varicocele. The directions for vaccination which were issued by the Surgeon-General were very detailed and leave no room for doubt as to the importance attached to vaccination by the Americans. With regard to the x ray Dr. Nicholas Senn says: "Special stress was placed upon the inutility of the ordinary and Nélaton's probe in locating and finding bullets lodged in the body. Attention was called to the value of the x ray as a substitute for the probe in making a reliable diagnosis. ..... If from the nature of the injury and the symptoms presented the bullet is located in a part of the body readily and safely accessible to the knife and it is deemed advisable and expedient to remove it, this can often be done more expeditiously and with a greater degree of certainty by enlarging the track made by the bullet than by relying on the probe in finding and on the forceps in extracting the bullet. If, as is often the case, the whereabouts of the bullet is not known, its presence and exact location can be determined without any pain or any additional risk to the patient." With regard to Dr. Gray's skiagraphic work it is said that "his large collection of skiagraph pictures will furnish a flood of new light on the effects of the small calibre bullets on the different bones of the body." In fractures in close proximity to large joints the x ray was found to be of the greatest value in ascertaining whether or not the fracture extended into the joint. A full account is given of the Hospital Corps and the "floating hospitals" which is very interesting.

In the chapter on the Qualification and Duties of the Military Surgeon the author says: "The surgeon who can extemporise an operating table in the field and who can secure asepsis with the use of the camp kettle, soft-soap, and carbolic acid or sublimate, and who can perform the most difficult operations with the simplest and fewest instruments, with little or no assistance, is the one who will accomplish the most and who will obtain the best results in the field." A sheet with notes on 200 cases of typhoid fever occurring during the invasion of Porto Rico is given: this disease together with yellow fever, dysentery, and malaria were the most formidable enemies. In the chapter on the Wounded of the Porto Rican Campaign notes of 30 cases are given which will be found of interest as showing how rapidly wounds which are inflicted with the small calibre bullet will heal. Having had an opportunity to make an accurate investigation into the subject of Cryptorchism: its Frequency and Results, by the examination of 98 5 recruits (ages from 16 to 51 years), Dr. Senn found that 59 of these had incomplete descent of the testicle—in only one was the condition bilateral. With reference to the explosive effect of the small calibre bullet a study of the immense amount of material collected at Santiago convinced the surgeons that it had been greatly over-estimated and Dr. Senn cites 24 cases as illustrations. The author assigns the failures in protecting the more serious wounds against infection to (1) inadequate supply of first dressing; (2) faulty application; and (3) unnecessary change of dressing. On this last reason he lays special stress. In speaking of the effects of bullets on the soft tissues Dr. Senn says: "In all cases the swelling of the tissues at this time had nearly or entirely obliterated the tubular wound, the location of which was indicated by a dark discolouration, parenchymatous extravasation, remains of fluid or coagulated blood, and a limited area of œdema and infiltration." A long account is given of the surgery at Camp Wikoff, whither the army returned after the fighting; and notes are given of cases of hernia, varicocele, hydrocele, injury and disease of bones and joints, removal of foreign bodies, abscesses—connective tissue and glandular—abscess following typhoid fever, erysipeloid, affections of the rectum and anus, pararectal abscess, fistula, and hæmorrhoids—84 cases in all. Articles on Empyema and its Treatment and Nursing and Nurses in War bring to a close this very readable volume. Its value would have been enhanced by the addition of an index.

LIBRARY TABLE.

The Pocket Case Book for District and Private Nurses. London: The Scientific Press, Limited. 1899. Price 1s.—With space for notes on 50 cases and with strength to stand the necessary wear and tear, this book should prove very useful to nurses. Provision is made for entries on all essential points in a small compass; these entries, if made regularly, are conducive to increased powers of observation and memory on the part of the nurse.

Dictionary of Medical Terms—English-French. By H. DE MÉRIC, M.R.C.S. Eng., Surgeon to the French Hospital, London. London, Paris, Madrid: Baillière, Tindall, and Cox. 1899. Pp. 394. Demy 8vo. Price 5s. net.—The need of such a book as the present must be evident to all medical men, especially to those who have constantly to refer to French medical literature. So far as we have used the dictionary we have found it accurate, clear, and concise—its use confirms the opinion that no pains have been spared in the production of a good and serviceable book. Amongst other features we may note the appendage of the genders of the French substantives and the enumeration of the different methods of medical treatment as well as the various surgical operations under the names of their respective originators. This association of an operation with an individual name is to be deprecated, but as long as it continues such an enumeration is useful. The volume is well arranged and not bulky, each page being divided into two columns of clear print. We understand that the second division of this work—French-English Medical Terms—which will complete the dictionary, will appear shortly.

The Annual Charities Register and Digest, 1899. London: Longmans and Co. Pp. 758. Price 4s.—This book contains a classified register of charities in, or available for, the metropolis, together with a digest of information respecting the legal, voluntary, and other means for the prevention and relief of distress and the improvement of the condition of the poor. An introduction by Mr. C. S. Loch, secretary to the Council of the Charity Organisation

Society of London, is a book in itself, well worthy of careful perusal, supplying as it does an outline of the principles of charitable work and touching upon particulars in regard to the Poor-law, reformatory, and industrial schools, the vestries and their sanitary duties, &c. The index is an elaborate one and supplies all necessary references.

An Introduction to the Study of Materia Medica. By HENRY G. GREENISH, F.I.C., F.L.S., Professor of Materia Medica and Pharmacy to the Pharmaceutical Society of Great Britain. With 213 Illustrations. London: J. and A. Churchill. 1899. Pp. 511. Price 15*s.*—This volume, which is designed for students of pharmacy and medicine, gives a short account of the more important crude drugs of vegetable and animal origin. In the preface we find that the work is the outcome of the necessity for a suitable text-book to relieve students of the burdensome task of taking and copying out copious lecture notes, which, in the author's opinion, is more disadvantageous than beneficial. The student is assumed to have some knowledge of botany and chemistry—organic and inorganic. The plan of the work divides the drugs into organised and unorganised. The unorganised drugs have been divided into groups depending chiefly either upon difference of composition or of mode of preparation. Full advantage is taken of varied typography so that the reader may see at a glance the source, description, constituents, adulteration, and uses of the drug studied. The illustrations are admirably done, the paper and print are good, and there is a copious index.

A Manual of Organic Materia Medica. By JOHN M. MAISCH, Ph.M., Phar. D., late Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy. Seventh edition. Revised by HENRY C. C. MAISCH, Professor of Materia Medica and Botany in the Medico-Chirurgical College of Philadelphia. With 285 Illustrations. London: Henry Kimpton. 1899. Pp. 523. Price 10*s.* 6*d.*—This book, although the new edition has increased in its material, still retains the convenient size of the former editions. Advantage has been taken of the adaptation of the work to the new British Pharmacopœia to incorporate all recent advances in the pharmacognosis and chemistry of drugs and to introduce such substances as may have attained a medical importance since the previous issue. The volume is divided into three parts: Part I. dealing with animal drugs, Part II. with cellular vegetable drugs, and Part III. with drugs without cellular structure. Copiously illustrated and well indexed, this manual has retained its popularity.

Practical Materia Medica. By GRACE HAXTON GIFFEN, L.R.C.P. & S. Edin.; Bathgate Gold Medallist in Materia Medica, Royal College of Surgeons of Edinburgh; Senior Demonstrator of Anatomy Ladies' School of Medicine, Minto House, Edinburgh. Second edition. Edinburgh: E. and S. Livingstone. Price 2*s.*—This is one of a series of medical handbooks and is intended for use as a pocket manual. In this edition besides alterations in accordance with the new Pharmacopœia, a chapter of Tests is added and alkaloids are treated more fully. The arrangement of this little book is simple and it should prove useful to students who are revising just before an examination.

Text-book of the Embryology of Invertebrates. Vol. II. By Dr. E. KORSCHEFT, Professor of Zoology and Comparative Anatomy in the University of Marburg; and Dr. K. HEIDER, Professor of Zoology in the University of Berlin. Translated from the German by MATILDA BERNARD. Revised and edited, with additional Notes, by MARTIN F. WOODWARD, Demonstrator of Zoology at the Royal College of Science. London: Swan Sonnenschein and Co., Limited; New York: The Macmillan Company. 1899. Pp. 375. Price 12s.—It was originally intended to complete this translation in three volumes as in the original, but after the publication of Volume I. it was found necessary to divide the two remaining parts of the original into three volumes; this change has led to a different order of the subject-matter. The chapters dealing with the Phoronidea, the Bryozoa, Ectoprocta, and Entoprocta, and the Brachiopoda are consequently placed at the beginning of this volume instead of at the end of Volume IV., which we think a more natural order. Additional notes and references have been added relating to the most important fresh observations made since the appearance of the original. The translation is lucid and well indexed, the diagrams are good, and means of reference are easy.

Flora of Kent. By F. J. HANBURY, F.L.S., and E. S. MARSHALL, M.A., F.L.S. London: F. J. Hanbury. 1899. Pp. 444.—This book consists of an account of the flowering plants, ferns, &c., with notes on the topography, geology, and meteorology, and a history of the botanical investigation of the county. The use of such a book to those who wish to collect or study the wild plants of Kent and also to those who wish to compare its flora with that of other districts, is undoubted. We think that botanical students will find this work thoroughly trustworthy and reliable. The care and work involved in the compilation of this record seem to have been very great, which no doubt accounts for the result produced. In its general arrangement the "Flora of Kent" is modelled upon the "Flora of Middlesex" which appeared in 1869. The book is accompanied by two good maps and a full index.

The People's Progress in the Light of Concrete Revealings of the Mind. By the Rev. W. G. DAVIES, B.D. London: Elliot Stock. 1898. Pp. 168.—The chief end sought by this aspiring little book is social progress in the attainment of which the author (with some clever arguments) more particularly examines the mental facts involved. Though the author deems it wise to abstain from a controversial treatment of the subjects discussed he presents his propositions in such a way as will necessarily raise some points for keen debate. The volume is divided into four parts: Part I., Text of Work—"In order to Be, a man has to know, to feel, and to do, but as a man specially to know"; Part II., Thoughts and Words; Part III., Feeling or Emotion; and Part IV., Of Doing.

Quæro. By JAMES H. KEELING, M.D.Edin., F.R.C.S.Eng., late Professor in Gynæcology in the University College, Sheffield. With Diagrams. London: Longmans and Co. 1898. Pp. 172. Price 2*s.* 6*d.*—This book is intended to meet certain materialistic and agnostic difficulties of the day. The style is at once comprehensive and clear even to the mind not deeply versed in the scientific thoughts underlying Materialism, Spencerism, Pantheism, &c.; it is, in fact, founded on modern science but written so as to be understood by anyone of ordinary middle-class education. The volume is divided into four chapters; Chapter I. (Is Evolution Automatic?) deals with matter, energy, and intelligence; Chapter II. (Is Evolution Power or Mandate?) discusses the relation, if any, of evolution to matter and energy; and Chapters III. and IV., accompanied by five diagrams, treat of the Kinetics and Metakinetics of a Brain-cell and the Theory of a Supreme Noumenon from another point of view. Throughout the book all reference to the teachings of sacred literature is avoided, the main object being to ascertain the facts of the case as set forth by science and reason.

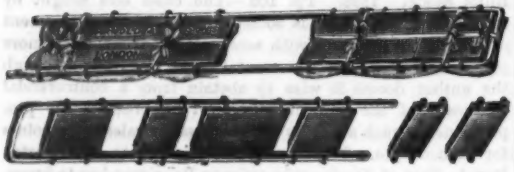
The Gospel according to Darwin. By Dr. WOODS HUTCHINSON. Chicago: The Open Court Publishing Company; London: Kegan Paul, Trench, Trübner, and Co. 1899. Pp. 241. Price $1.50—This is an attempt to get a glance-view of a few of the influences affecting human hope and happiness from the standpoint of that view of

and attitude towards, the universe which is expressed by "Darwinism" or "the theory of evolution." The author maintains for this latter view that "far from destroying or antagonising the spirit of worship Darwinism broadens and quickens it." The volume contains an interesting chapter on the Economics of Prostitution, with tables of analysis of the motives and of the proportion of those who marry and reform. The language throughout is clear and forcible but we note the omission of an index.

New Inventions.

A NEW SPLINT.

I HAVE devised a splint the principle of which I believe to be new and which I think will facilitate the treatment of compound fractures which occur in the arm or leg. It is formed of pieces of wood with small eyelet holes screwed into their ends through all of which runs a piece of strong galvanised wire round in shape and surrounding three sides of the splint, the fourth being left open for the running on and off of the sections of wood. These sections of wood fit accurately together and so make a continuous splint, and owing to the wire framework it is almost as firm as a solid wood splint. It will be observed that the diagrams show the sections of wood of differing widths; this is intentional, because in this way the interruption necessary for the wound of a compound fracture can be made at any position in the splints by removing one or more of the sections or altering their relative position. When the splint is in use the



sections are kept from slipping up and down the framework and the interruption is kept in its proper place by an arrangement of tapes on the pads by which they are fastened to the splints and which effectually prevents the movement of the sections one from another, the lateral pressure of strapping or bandages also tending to keep the sections from moving. The splint has been used by me in the Trimmer Cottage Hospital at Farnham in a severe compound fracture in a boy and the matron in charge had it under her observation for some weeks and did not find any fault with it. The principal advantages of this splint are that from its construction one splint will serve where several would otherwise have been necessary as the interruptions can be altered at will and can be made of any size and placed in any position. It is also less cumbrous than the present form of interrupted splint, allows more facility for dressing the wound, and can be easily washed and disinfected.

Messrs. Arnold and Sons have at present made them in sizes for the leg or arm, but the principle can be adapted to any size for either of these limbs.

Farnham, Surrey. S. G. SLOMAN.

OPEN-AIR SANATORIA FOR THE TREATMENT OF TUBERCULOSIS.

THE advantages of systematic open-air treatment for patients suffering from tuberculosis are now fully recognised by the profession, so that a list of the sanatoria in existence for paying patients may be useful. There are now three sanatoria of the kind in Hampshire, under Dr. Pott, Dr. Johns, and Dr. Mander Smyth respectively. In Sussex there are a small sanatorium at Rudgwick and a colony at Crowborough. In Surrey a large sanatorium (London Sanatorium) is being prepared under the auspices of the National Society for the Prevention of Tuberculosis, and a small one will probably be opened at Christmas under Dr. Rufenacht Walters at Crooksbury Ridges, near Farnham. There are two in the west of England, on the Cotswolds and the Mendips respectively. There is a colony in Oxfordshire under Miss Colebrook, who will soon have a sanatorium open. In the eastern counties Dr. Jane Walker has a sanatorium near Colchester and Dr. Burton-Fanning will open another at Mundesley in October. There is one recently opened at Rostrevor in Ireland. Another is projected at Harrogate, in Yorkshire, under Dr. J. T. Hislop. Dr. Pott's sanatorium is in the Poole-road, Bournemouth. There are beds for eight or more patients; charges from six to seven guineas. Dr. Johns, who began the treatment at Sunny Mount, Meyrick Park, a suburb of Bournemouth, will shortly migrate to Stourfield Park, where a large building has been acquired by a company. Dr. Johns has beds for 20 patients. In the new building there will be room for 50 or 60 patients; charges from four to seven guineas. Dr. Mander Smyth's sanatorium at Linford, near Ringwood, on the edge of the New Forest, has been modelled on that of Dr. Walther at Nordrach in Germany. There are beds for 12 patients at a uniform charge of five guineas. Dr. Jane Walker's sanatorium, originally at Denver in Norfolk, has been removed to larger temporary premises at Boxted, near Colchester. There is at present room for 23 patients at a charge of from four to five guineas. The East Anglian Sanatorium at Naylands in Suffolk, which will replace the one at Boxted, will have 40 or more beds. Dr. Walker comes down periodically from London, another medical lady being in residence. There are two other establishments under the care of Dr. Walker, a cottage for a few patients of the hospital class at Denver and a temporary sanatorium at Southend-on-Sea, which will presently be moved to Clare, near Colchester. There are now five beds in the latter at two guineas; in the new building, which will have a resident medical lady, there will be 20 beds. The Mundesley Sanatorium, which is near the north-east coast of Norfolk, will have 15 beds; charge five guineas. Mr. W. J. Fanning will be the resident medical officer. The Cotswold Sanatorium, under Dr. Pruen and Mr. Braine-Hartnell of Cheltenham, consists of two specially-built residential blocks (one nearing completion) and a neighbouring mansion acquired from Mr. W. Hicks Beach. Mr. Braine-Hartnell resides at the sanatorium, which at present has 20 beds, and will soon have 27. Terms uniformly five guineas. The sanatorium on the Mendips, in Somerset (Nordrach upon Mendips), has 40 beds, 15 being in a specially-built block. Dr. Thurnam and Dr. Gwynne treat their patients according to strict Nordrach methods. Terms five guineas. The colony in Oxfordshire is at Poppard, near Rotherfield Greys. It consists of a number of cottages and farmhouses, with a total accommodation of 10 or more. A sanatorium for 12 beds is being erected. Terms from two to four guineas. The colony at Crowborough, between Brighton and Tunbridge Wells, is under the care of Mr. Plater Long. Terms from two to six guineas. The Rudgwick Sanatorium, between Horsham and Guildford, is under the care of Dr. Annie McCall, who goes down periodically from London. There are at present six beds, but soon there will be 12. Patients are looked after by a local practitioner in case of need. There will, however, shortly be a resident medical lady. Gentlemen are not at present received. Terms two guineas. With the exception of Dr. Pott's and Dr. Johns's present establishments the above-mentioned sanatoria are all situated in the open country. Those on the Cotswolds and the Mendips and the Crowborough colony stand at 800 feet or more above the sea level. The sanatoria on the Cotswolds, the Mendips, the East Anglian, the Mundesley, the one at Crooksbury Ridges, and the projected one at Harrogate are all provided with extensive grounds. Many medical men also are carrying out the treatment in their own houses in various parts of the country.

TREATMENT OF GARBAGE IN SYDNEY.—At a recent meeting of the Sydney City Council it was decided to call for tenders in England, America, and locally for the construction and erection of refuse destructors. The council also decided not to make any alteration in the appointment of city health officer.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 9, 1899.

THE dull season accustoms us to almost anything in journalism but we were scarcely prepared to think that a retired judge, who is greatly respected and whose authority is recognised, would take advantage of it and of the absence from town of so many responsible people to publish a letter occupying one and a half columns in the *Times* on the sensational subject of "Secret Commissions and the Medical Profession." But this is what has been actually done by no less a person than Sir EDWARD FRY. This subject seems to have a sort of weird fascination for some people. We lately reported that a preacher in a large suburban church—who, by the way, in the morning had soundly denounced the French nation for seeming to sympathise with the court-martial in condemning Captain DREYFUS on the strength of secret and very unsatisfactory documents—had allowed himself in the evening, on the strength of the report of the London Chamber of Commerce, to depict in harrowing terms the medical profession as making profits out of commissions from druggists to whom they referred their patients when they required medicine and from undertakers when the need for coffins arose. The singular inconsistency of the preacher in doing that which he condemned in others and his indiscretion in making baseless charges are bad enough, but they are exceeded by the performance of Sir EDWARD FRY. Our readers may remember that in 1896 he wrote to the *Times* on the subject and in the style of "a shilling shocker" gave wings to his imagination over what he called a psychological study—a terrible conflict of emotions in a young medical man pressed for his last quarter's rent standing by the bedside of a patient hovering between life and death and computing the comparative advantage to himself of the patient living to be a source of profit and credit or dying to yield the "prosperous" undertaker's commission. Sir EDWARD FRY reverts to our comments on that occasion and italicises the words that offers of commissions from undertakers to medical men are in *the usual way* consigned to the wastepaper basket. Does Sir EDWARD FRY desire any better destination for them or does he understand us to admit that in some exceptional instances they are entertained? He goes over the same ground on the present occasion. He argues that because the Council of the British Medical Association called upon the Chamber of Commerce to substantiate the accusation that therefore "the Council of the British Medical Association have sought to hamper rather than to help the London Chamber of Commerce in their effort after honesty." In the *Times* of Sept. 6th Dr. J. ROBERTS THOMSON, the President of the Council of the British Medical Association, quotes the resolution of the Council on the matter, which resolution was passed at the recent meeting at Portsmouth, and reaffirms the belief that if a body makes charges it should be prepared to substantiate them.

Sir EDWARD FRY is especially severe in his reference to Dr. SAUNDBY'S recent statement on the subject at the annual meeting of the British Medical Association. Dr. SAUNDBY, then President of the Council, said that inquiries had been made which showed that occasionally presents had been offered for various services after the event, but there was no case in which a commission was offered to a person if he would do a certain thing. Cheques had been given to medical men to recompense them for what was supposed to be a good turn, *but these cheques had always been returned.* (The italics are ours.) Sir EDWARD FRY then goes on to disparage the inquiries: "By whom were they made? and how? and how many?" He says that "Dr. SAUNDBY suggests that the acceptance of a commission on work done is either innocent or less immoral than the acceptance of a like favour for work to be done." Dr. SAUNDBY may well be left to defend himself from such an attack, but to our mind the impression is conveyed of a very forced interpretation of his words and a very ungracious recognition of the efforts of the British Medical Association to arrive at the truth. We will go further and say that it is scarcely the duty of the medical profession or its bodies primarily to make such inquiries. They are not detectives. It is not their business to assume the truth of severe and sensational charges against their own brethren. It is even their business to disbelieve them till facts and data and details render disbelief impossible. Sir EDWARD FRY is not content with repeating insinuations—not to say charges—against medical men on the strength of evidence which would not have satisfied him of guilt when he was on the bench, but he rakes up a discreditable case disposed of six years ago in which several medical men appeared in the Law Courts as having received paid-up shares in a certain company—"MacDonald, Sons, and Company, Limited"—on the understanding that they would recommend the company's wares. They appealed to the judge—Mr. Justice VAUGHAN WILLIAMS—to be relieved from paying anything on their shares in the liquidation of the company which took place in a very short time. The judge acceded to their application on technical grounds but made some very proper reflections on the conduct of the medical men in accepting shares on such terms. The *Times*, THE LANCET, and other journals called on the General Medical Council and other medical authorities to use their disciplinary powers in regard to the medical men who had so grievously compromised themselves and discredited their profession and we may remind Sir EDWARD FRY that the General Medical Council passed the following resolution:—

That the Council, having heard with regret that certain registered practitioners had agreed to accept founders' shares in a company in consideration of advertising the wares of the company, expresses its condemnation of the action of such medical practitioners who have accepted such shares and of the system of giving testimonials of this nature.

We regret that the General Medical Council contented itself with passing a mere abstract resolution without even calling the practitioners in question before them. In this we entirely agree with Sir EDWARD FRY, though he does not seem to know the imperfection of the powers of the Council in dealing with such cases. But this case is on a very different footing from the loose charges which constitute

the bulk and basis of his long and ungenerous letter in the *Times*. Be it understood our complaint against Sir EDWARD FRY'S letter is not on the ground of its length. We have one fatal fault to find with it—it is not judicial. And to see Sir EDWARD FRY, who was formerly one of HER MAJESTY'S judges, bringing accusations on the strength of unproduced documents and of the evidence of anonymous correspondents of evening papers is enough to make angels weep. We do not pretend to be angels. The 34,000 members of the medical profession must necessarily include some few persons with low conceptions of medical duty and dignity. If Sir EDWARD FRY had used his great power in denouncing the Chamber of Commerce for not producing their evidence, or the judge who let the medical men in the MacDonald case go scot free, we should have been quite in agreement with him. But to accept the evidence of anonymous witnesses who cannot be produced and jauntily to excuse the Chamber of Commerce for using such evidence against a great profession "because the communications were received under a promise that they should be treated as strictly private and confidential" is conduct in an ex-judge which would be amusing if the subject were not so exceedingly serious. Means should be found to compel the Chamber of Commerce, despite Sir EDWARD FRY'S easy excuse for them, to disclose the facts. When this is done we shall not be behind Sir EDWARD FRY in eagerness to consider them and, if they should prove that medical men have been guilty of such disgraceful practices, he may rest assured that no effort will be wanting on the part of the profession to remove such a foul stain from its honour. But till this is done we shall treat the charges with the contempt which they deserve.

A SPECIAL meeting of the committee of the Liverpool School of Tropical Diseases was held on August 29th to consider what further steps should be taken to follow out Major Ross's discovery of the malaria mosquito at Sierra Leone to which we referred on August 26th. As our readers are probably aware, prior to the despatch of the expedition the principal Government departments had been approached and asked to support the expedition by granting pecuniary aid. Mr. CHAMBERLAIN replied that he had learned with great satisfaction that the expedition was being despatched and that he appreciated the energy and public spirit shown by the committee of the School in the matter. He regretted that he was unable to make any pecuniary grant in the present instance towards the cost of the expedition, as the funds collected for the Malaria Investigation Commission sent out by the Colonial Office and the Royal Society, members of which will shortly visit West Africa, would barely suffice for the purposes of the Commission. He said, however, that he had instructed the Government of Sierra Leone to give every facility to the work of the expedition, and this, we hear, has been warmly accorded. The Foreign Office wrote that Lord SALISBURY had been in communication with the Colonial Office with regard to the request of the School, that he had been shown Mr. CHAMBERLAIN'S reply and desired to associate himself with its terms. The India Office wrote that Lord GEORGE HAMILTON did not feel justified in sanctioning a grant from Indian revenue towards the expenses of the expedition. The Liverpool School thus balked of Government aid was thrown on its own resources. The British Medical Association was applied to and promptly and generously responded by voting a sum of £100 towards the expedition. It is unfortunate that the appeals for Government aid could not have been granted. Major Ross has met with great success in his investigations in a very short time, but unfortunately he is unable to remain in Sierra Leone until the time when the Commission appointed by the Government will reach the colony. He has cabled for more men to carry on the work. In accordance with this request Dr. FIELDING-OULD started for Africa on Sept. 2nd to join Major ROSS and receive personal instructions from him so that the work may be carried on. This will again be at the expense of the Liverpool School. Great credit, however, must be given to Messrs. ELDER, DEMPSTER, and Co., whose senior partner, Mr. A. L. JONES, has done so much for the School, for the public spirit which they have displayed in undertaking to carry the members of the expedition to West Africa free of charge.

The Liverpool expedition started with the intention of ascertaining the nearest place where the "Anopheles" could be found. This spot would then be the centre of observation in order to make further investigations as to the means which might be adopted in the way of extermination. In an article which we publish to-day (*vide* page 743) some of the results already achieved are detailed. Italian investigators had already demonstrated that the Anopheles is the intermediate host of the tertian and æstivo autumnal parasites. Several specimens of Anopheles were captured and found to be gorged with blood and five mosquitoes caught at Kissy were allowed to feed on quartan patients. Two days afterwards the insects were dissected. Among several of those caught at Wilberforce one was found to be infected by quartan parasites, whilst of those from Kissy fed on patients at Wilberforce the first which was dissected showed parasites corresponding in size to a two-day-old infection, thus conclusively proving that the Anopheles may also be the host of the quartan parasite. We further read, however, that a search at Kissy for the breeding-place of the Anopheles proved quite unsuccessful, whilst the haunts of Culex have been easily discovered. The breeding-places of Anopheles would appear to be very few and isolated and therefore probably it would be easy to exterminate the insects when found. Thus, the object of the expedition is not so hopeless as might at first sight appear. To attempt to deal with the general species of mosquitoes would indeed be a herculean task, but success may be hoped for where only one species is concerned.

The Liverpool School of Tropical Diseases is already amply justifying its formation. It is conducting investigations which will obtain for it the thanks, not only of our own country, but of all Governments whose dominions or dependencies lie in malarial districts, and it is only natural that those who are responsible for the expedition should seek help from those who are likely to reap the benefit of its results, and more especially does this apply to the Colonial and India Offices. It is a matter of regret that no

help is forthcoming from them. It is true that another Commission has been sent out by the Colonial Office, but Major Ross has already prepared the ground for them, and consequently deserves the aid for which he asks, and we cannot help a feeling of surprise that the India Office refuses a grant. Such observations are of the utmost value to troops serving in the tropics. In fact, as will be seen on referring to the article to which we have alluded, two West Indian regiments stationed in the neighbourhood where the experiments are being carried out are fever striken. Whilst renewing our congratulations to Major Ross and his companions and to the Liverpool School of Tropical Diseases we sincerely trust that the necessary funds will be obtained so that their valuable labours may not be curtailed.

WE would call the attention of our readers to Dr. W. J. SIMPSON'S able and interesting address on "Recrudescence of Plague in the East and its Relations to Europe" and to other articles dealing with plague published in the present number of THE LANCET. The epidemic has been slowly but surely advancing to the westward and the establishment of the disease in Europe must naturally be regarded as a matter of very grave and significant interest. Portugal must now be added to the list of plague-infected places. To summarise the history of the course of the epidemic very briefly it may be said that five years ago plague broke out in Hong-Kong; that it afterwards advanced from China to India, and thence to East and North Africa (Egypt); it has also shown itself in Persia, at the Mauritius, and other places; an outbreak has occurred in Russia at Kolobovka in the Astrakhan Government; and there has recently been a re-appearance of the disease in China and India (especially at Poona), where, since the first appearance of the epidemic some years ago, the disease has not altogether ceased to manifest itself.

Speaking generally, it may be said that plague (while possessing features in common with other epidemic diseases) appears to comport itself in a definite way and in a manner peculiar to itself. As it depends upon a living portable entity it has, first of all, to be carried from an infected locality and introduced into another and healthy one in order to give rise to an outbreak of the disease. The study of plague is, of course, mainly connected with the whole life-history of its bacillus, the media in which it flourishes, and the way by which it effects an entrance into the body—matters about which we have yet a great deal to learn. In the next place, when plague has once succeeded in establishing a footing for itself in any congenial soil, it is very difficult, if not altogether impracticable, according to our present knowledge and under the ordinary circumstances of daily life, to make sure of eradicating it by the application of those methods usually employed in the case of other epidemic diseases. It exhibits a singular tenacity of life and an adhesiveness, as it were, to the soil and local surroundings, but experimental researches have not so far confirmed the opinion that the poison of plague is in the soil. After varying periods of inactivity and dormancy the disease is very apt to reappear and give rise to fresh outbreaks on the occasion of climatic conditions favourable to its growth and re-vitalisation—a process of re-infection often appears to take place. There are, moreover, certain well-known endemic plague centres from which, apparently, the disease does not usually spread and where the chief factors of the endemicity are, no doubt, dirt and defective hygiene.

The history and geographical progress of plague—the long intervals of time that occur between its appearances and its diffusive power when it does appear—are rather indicative of a pandemic than an epidemic. Unlike epidemic cholera, it does not suddenly break out explosively in any violent or widespread outbreak, but on reaching a new locality it extends itself slowly and lasts for a considerable time. Then, again, among its characteristics are its terrible fatality and the variety of forms which it exhibits, from the mildest and almost aborted type of the disease (not always easily identifiable with plague) to the virulent pneumonic type in which the number of the specific bacilli discoverable in the sputa resembles a pure cultivation, or even to cases where, it is alleged, the attacked occasionally die from a severe constitutional infection, characterised by high fever and extreme nervous depression, before the usual anatomical lesions proper to bubonic plague have had time to develop themselves. Moreover, many of the lower animals—notably rats (which have led many to believe that plague is a soil poison), monkeys, and guinea-pigs—are very susceptible to plague.

Notwithstanding that plague is highly contagious the influence of defective hygiene in developing and propagating the disease is generally recognised. In well-conducted hospitals plague infection is almost *nil* and the comparative immunity of Europeans in India has been remarkable. The influence of crowded sites and of the overcrowding of buildings as favouring factors is undoubted, while the plague bacillus shows a rapid loss of vitality in air and sunlight, but thrives in filthy media. Something much more than a mere reliance on hygienic measures, however, is required in the case of plague. The articles in our present number ably discuss the whole subject and lay down the various points that still urgently require to be investigated with something like scientific precision. In the meantime we are glad to know that a vigilant watch is being kept on all vessels coming to this country from any infected port or country and that every sanitary authority concerned has already been conferred with by the Local Government Board as to the necessities of the situation.

J. BABINSKI, in February, 1896, brought before the Société de Biologie of Paris a new clinical feature, *le phénomène des orteils*, in connexion with the plantar reflex which he had observed to occur invariably in lesions of the lateral column of the spinal cord. He showed that in normal conditions the plantar reflex elicited by excitation of the sole of the foot is characterised by a flexion of the toes on the metatarsus, or that in some persons the toes may remain to all appearance motionless, but that in any case there is never in health a movement of *extension* of the toes as part of the plantar reflex. This applies especially to the big toe. In certain pathological conditions, however, excitation of the sole provokes extension of the toes, especially of the big toe; and this phenomenon occurs only in cases where there have been

lesions of the pyramidal tract of the cord. BABINSKI claims that this extension sign never occurs in normal adults or in so-called cases of functional disease—e.g., hysterical paraplegia of flaccid or spastic character. The accuracy of this last contention is also confirmed by BUZZARD,[1] and this test seems to be a valuable diagnostic aid in differentiating between functional and organic disease. Of the clinical signs of lesions of the pyramidal system it is the earliest to appear and may be the only sign present, as in cases of recent hemiplegia when the myotatic irritability is absent or diminished, or as in Friedreich's disease, or, again, as in combined posterior and lateral sclerosis with absent knee-jerks.

VAN GEHUCHTEN[2] has published an investigation of a number of cases confirming BABINSKI'S results and in a recent number of *Brain* (Spring, 1899) JAMES COLLIER gives the results of the clinical examination of 500 patients studied as regards the presence or absence of this sign. Of these, 100 were adults from the medical wards of a general hospital and presumably free from any lesions of the nervous system; 100 were children in the wards and out-patient department of the Hospital for Sick Children in Great Ormond-street; and 300 were cases of nervous disease at the National Hospital in Queen-square. The supine position with the lower limb semi-flexed at the hip and knee and rotated out, with the knee resting on a pillow so as to secure muscular relaxation, was found to be the best position for the observation of the reflex. Observations were also made during sleep on many cases. It was noted that in persons whose plantar reflex was very sensitive and easily elicited, stimulation of the dorsum of the foot or over the outer side of the leg (all areas supplied by the fifth lumbar nerve) produced movements similar to those following stimulation of the sole of the foot. In infants the plantar reflex is very brisk and differs markedly from that of the adult in that the first movement in the reflex is an extension of the great toe followed by extension and spreading out of all the toes with eversion of the foot and dorsalward movement of the ankle. Subsequently there follow flexions of the knee and hip. This special type of reflex—infantile response—is similar to that which occurs in the monkey, and BABINSKI explains it by the fact that in very young children the pyramidal system is incompletely developed. This infantile type of reflex persists until the child becomes able to walk, when it is gradually replaced by the ordinary or "adult" type of reflex. The age at which this occurs is between the second and third years, but in feeble, and especially in rickety, children it may be delayed as late as the fourth year. In pathological conditions the extension symptom was stated by BABINSKI to be present and to be pathognomonic of lesions of the pyramidal system, with the only exception of total transverse lesions of the cord in which no plantar reflex at all could be obtained. VAN GEHUCHTEN and COLLIER both confirm this and the latter observes that the response in a well-marked spinal case is more deliberate than in the infantile or in the flexor response. Extension of the great toe precedes all other movements; it is followed by extension of the other toes and by dorsalward flexion and inversion of the foot. The tibialis posticus and anticus and the peroneus longus contract strongly and fix the ankle and a temporary increase of the plantar arch is noticed. Where the reflex is very sluggish the extension of the great toe may be the only movement in response. (Especial care must be taken that a dorsiflexion of the ankle is not mistaken for extension of the great toe.)

In three cases of probably total transverse lesion of the cord at the levels of about the sixth or seventh dorsal roots COLLIER found in each case a slight plantar reflex preserved and it was of the "extension" form and sluggish in manifestation. Of 36 cases of myelitis, including paraplegia from partial compression, 34 always showed a marked extensor response, the remaining two being advanced cases (one of 20 years' duration) and with atrophic palsy and contractures of the toes. Of 30 cases of disseminated sclerosis 28 showed an extensor response on both sides. Of 36 cases of organic hemiplegia 28 gave an extensor response in the paralysed limb and a flexor response in the sound limb, while three cases gave an extensor response in both limbs, and a necropsy in one of these revealed degenerative changes in both cerebral hemispheres. The other cases showed exceptional and anomalous phenomena not easy to explain. In six cases of Friedreich's disease all showed a marked extensor response, and six cases (three each) of syringomyelia and of amyotrophic lateral sclerosis all gave an extensor response. Of 40 cases of epilepsy where 38 showed a normal flexor response it was found that after every fit of severe convulsions the extensor response was present and lasted for from five to 10 minutes after the convulsion. In cases of epilepsy with unilateral convulsions but with no hemiplegia the extensor response was only present after fits on the convulsed side. Cases of Jacksonian epilepsy affecting the foot always presented an extensor response for a short time after a fit. In three cases of cerebellar tumour and 16 cases of cerebral tumour, not involving, however, the pyramidal tract, the normal flexor responses were retained. Of 35 cases of "functional" disease 28 showed a flexor response which was normal or dulled or brisk, and in the remaining seven it was absent. In 10 cases of paralysis agitans the flexor reflex occurred in all but was sluggish. In 28 cases of tabes dorsalis 11 showed entire absence of any plantar reflex, in nine cases the flexor response was present in varying degree, and in five there were irregular movements of the toes and foot of considerable range and lasting some time. The extensor response was never present in any case. Of 15 cases of peripheral neuritis six gave no plantar reflex and nine gave a sluggish flexor response. In 20 cases of chorea (including three of Huntingdon's chorea) a normal flexor response occurred. In 20 cases of acute poliomyelitis in children who had previously been able to walk the flexor response was present but impaired in proportion to the involvement of the muscles, and in six cases of myopathy a similar condition was observed. In cases of neurasthenia and sciatica the plantar reflexes were normal. Both BABINSKI and COLLIER find that in cases of tetanus and of strychnine poisoning the plantar extension phenomenon is obtained, but is gradually replaced by the normal flexor response during recovery.

[1] Insular Sclerosis and Hysteria, Brit. Med. Jour., May 6th, 1899.
[2] Journal de Neurologie Belge, April 5th, 1899.

Annotations.

"Ne quid nimis."

THE SALE OF DRINK TO YOUNG CHILDREN.

WHETHER the views held on the "drink question" be what are termed extreme or moderate most people will agree that it is undesirable to familiarise young children with the sights and sounds of the drinking-bar and to put in their way the temptation to imitate their elders—if not their betters—by sipping the beer or the gin as they carry it home, and none will maintain that either one or the other is good for the morals or the physique of our stunted children of the slums. The chairman (Mr. Shann) of the Manchester Brewster Sessions stated in his speech the other week on selling drink to children that Liverpool (to its credit) had practically stopped such sale to children under 13 years of age. If smooth words and gentle stroking the right way will conduce to this result the Manchester publicans will doubtless hasten to follow suit and cease to give, as some of them have been in the habit of doing in their simplicity and kindness, packets of sweets to the children when they have come for "father's beer" or "mother's gin." No doubt, as Mr. Shann is reported to have said, "the licence-holders of Manchester were men of equal honour, kindness, and consideration [to those of Liverpool]," and Mr. Shann "felt sure the present appeal would be listened to as it had been in other places and that the trade would be as kind and generous as it had been elsewhere." Doubtless many of the publicans feel their position a difficult one. They are often only managers and must make the house pay or go, and "business is business." A signed letter in the *Manchester City News* of August 2nd gives a graphic illustration of the actual results of this baneful custom of sending the children for drink. A little lad, with pinched face and poorly clad, came out of a public-house in London-road with rum "for his mother" in a teacup. Within a yard he drank some, and in another 20 yards tasted again and gave a little girl some. The writer prevented two other children from having a taste and no doubt the mother would have thanked him, not perhaps for preventing young children from drinking raw spirits, but for safeguarding her rum. If this case may be taken as a fair sample of what is occurring in thousands of instances every day it shows the existence of a most powerful agency for the production of the love of drink and the habit of drinking at an early age. The boy said that "he was nine years old and the girl five," though they both looked younger, as the puny slum children often do. The conditions of life in the slums are not conducive to vigorous childhood, and if they are supplemented by spirit-drinking the prospect of seeing a healthy city population grow up is not bright. The writer of the letter thinks it very charitable of Mr. Shann to speak so graciously of the publicans, but some no doubt deserve it. It is difficult, however, to believe that the distribution of sweets to the small carriers of rum and gin arises from the publicans' anxiety to save them from contamination and injury, so that for the children's sake the law should be altered as regards off-licences.

TUBERCULOUS PERITONITIS: THE MECHANISM OF LAPAROTOMY.

IN an article which is quoted at some length by the *Journal de Clinique et de Thérapeutique Infantiles* of August 10th Dr. Hildebrand has endeavoured to answer the often discussed question why laparotomy appears to effect the cure of peritoneal tubercle. It is needless to follow him in a review of the various theories which have been brought forward to explain this apparent fact. His own view is that the salutary change is attributable to increased vascularity in the peritoneum due to the exposure and irritation of the part during the operation and to consequently quickened absorption. This opinion is founded partly on clinical observation and partly on the evidence afforded by experimental laparotomy. He finds that the operation when performed on dogs and rabbits in an atmosphere of ordinary air not warmed for the occasion shows the following results. A stage of more or less general hyperæmia is shortly followed by venous congestion with some distension and paresis of the bowel. If the abdominal cavity be now closed and re-opened next day the latter condition is found to continue. Moreover, a small amount of sero-sanguinolent fluid is found in the pelvic cavity. This is gradually absorbed after some days and while it remains is associated with local subacute inflammatory signs. It contains endothelial cells and leucocytes, but no cocci or bacilli. These appearances do not show themselves in the same marked degree when the operation is carried out in a peritoneum protected against aerial and other irritation by means of artificial serum. The results obtained by laparotomy in tuberculous animals are closely similar to those above recorded. Dr. Hildebrand operated on a group of six dogs inoculated previously with tubercle and found that in these the duration of life was distinctly prolonged as compared with that of nine others inoculated but not operated on. The latter series had all perished within four months after inoculation; the former survived from four to seven months and two, at 10 and 11 months respectively, were still alive. It is worth noting that when the operation is done at an early stage no advantage appears to be gained by it. When carried out at a more advanced period it is attended with evident benefit. The appearances noted in the laparotomies performed for the relief of tuberculous peritonitis are arterial hyperæmia more or less general and involving the tubercles themselves and a subsequent venous stasis followed by some exudation. Dr. Hildebrand does not claim a curative value for the operation, but he holds that a certain proportion of cases of tuberculous peritonitis tend to spontaneous cure and that this process is facilitated by the circulatory changes induced by laparotomy. He has also observed that in the tuberculous cases, as in those in which the normal peritoneum was opened, protection of the parts by artificial serum seems to interfere with the curative process. Animals thus protected when operated on died in a shorter time than did those not so protected. He therefore feels justified in associating a good result with that hyperæmia which constantly accompanies laparotomy under the ordinary conditions.

THE "MOSQUITO" PEST.

EVERY season has its morbid as well as its healthy side, its excesses and its humours as well as its beneficent purposes and effects. Summer is in all respects the period of ripe abundance. More especially is it rich in the forms of insect life, and some of these are—so it appears to man—highly objectionable. Among those which frequent this country is the so-called mosquito. Many of us have recently become only too familiar with the attentions of this troublesome insect. As regards the probable starting-point of its journey to our shores opinions differ. According to some it is South Africa or South America, while others locate it in Canada, fruit in the former and timber in the latter case providing the means of transit. Perhaps after all we need not look so far. The British gnat (*culex*) is a mosquito and the mosquito is a gnat. In pedigree, habits, diet, and voracity there is no essential difference between them. Consequently, though some

vagrants may have strayed hither from the tropical branch of the family it is probable that much of the annoyance from which we have lately been suffering is due to native energy. These little creatures abound in gardens and shrubberies and are no respecters of any persons who also frequent such places. Suburban practitioners have become familiar with the sequel. There is in most cases beyond a trifling irritation no very noticeable result from the gnat or mosquito bite. The application of a little boric acid powder satisfies all remedial purposes. Not seldom, however, there is considerable swelling of the part affected and occasionally severe pain. Usually there is hardly any constitutional disturbance and the occurrence of fever after bites of this kind should indicate the entrance into the system of some poisonous matter not natural to the insect of which the latter is the temporary vehicle.

EXPERIMENTS TO DETERMINE THE EFFICACY OF PLAGUE SERUM.

IN a report presented to His Excellency Rogers Pasha, the Director-General of the Sanitary Department, Cairo, in May, 1898, and now published, Dr. William Symmers gives an account of experiments carried out at the Serum Institute of Abbasieh in Egypt. The experiments were undertaken with the view of obtaining a therapeutic serum for the treatment of bubonic plague, the bacilli being obtained from specimens brought from Bombay by Dr. Ritter. Cultivations from these were found to exhibit a considerable diminution in virulence so that a two days' culture on agar-agar, for example, required ten days to produce death in white rats and guinea-pigs. Cultures of the bacillus on neutral bouillon were made and heated to 60° C. before being employed. Injections of these cultures were made into the subcutaneous tissues of the neck in the animals used—viz., horses. Local swelling and inflammation with enlargement and hardness of the glands at the angle of the jaw followed, but the animals continued to eat well and were apparently suffering no discomfort. The first injection was followed in ten days by a second and other injections followed later. In all six injections were given. The reaction in these animals was so insufficient, both locally and constitutionally, that it was judged that no good anti-bubonic serum could be furnished from them, and further experiment in this direction was not continued. In a second series cultures of the bacilli on neutral agar-agar were made and an emulsion of these with a small quantity of neutral bouillon was prepared just before injection. This was also heated to 60° C. for half an hour and the sterile solution thus obtained was injected. The reaction in these cases was more marked after each injection, the local swelling and inflammation were more intense, and in one case a small abscess also appeared in the gland. Finally, into another horse cultures of the living bacilli were injected; 15 injections were thus given. The horses were then allowed to pass through a period of reaction to the injection and blood was then drawn by venesection in the neck. The serum obtained from the blood was employed to determine its neutralising power on living cultures of the bacillus. The minimal fatal dose of the live culture was mixed with varying quantities of serum and the mixture was injected into the peritoneal cavity of white rats. In all cases control experiments were made—i.e., the minimal fatal dose of the bacillus alone was inoculated intra-peritoneally into white rats. The results were as follows. The serum furnished by the horse inoculated with living cultures was insufficient to save the infected rats. The horse treated with sterilised agar cultures gave a serum which in quantities of one-quarter cubic centimetre preserved white rats against the minimal fatal dose of the bacillus. Smaller quantities of the serum were incapable of preserving the rats. It was concluded from these experiments that the antitoxic power of the serum obtained was equal to that prepared by Yersin at the Pasteur Institute, Paris, so far as could be gathered from Yersin's published writings, and was similar and comparable in antitoxic value to the sera of cholera and of enteric fever previously obtained by Dr. Symmers at the British (now Jenner) Institute of Preventive Medicine. On the whole the sera in these experiments did not prove sufficiently strong in antitoxic value to warrant any hope of their being of therapeutic use in an actual epidemic of plague and it was suggested that for the latter purpose the use of more virulent bacilli inoculated in larger quantities and for longer periods of time was necessary. Under such conditions a more powerful and more effective antitoxic serum might in all probability be obtained which might serve the purposes of practical therapeutics in actual cases of bubonic plague.

BOARDING-OUT *v.* COTTAGE HOMES IN LANCASHIRE.

THE question — "what to do with our workhouse children"—is sufficiently important to justify its frequent consideration. A discussion took place at the meeting of the Chorlton Board of Guardians on August 18th, when very different opinions were expressed as to the boarding-out system, some speaking of the "great difficulties" and of "results ..... not compatible with the expense incurred." On the other hand, Mr. Nolan thought they were so tied down by stereotyped rules and regulations that an extension of their powers would give the system a better chance. Another guardian of much experience considered that the limit of payment—four shillings a week for boarding-out—was too low and that if they had had money at their disposal "the probability was that a large number of the children now at Styal would have been in comfortable homes." He did not wish to say anything against the Styal homes, but such homes "merely aggregated workhouse children and did not remove the taint of pauperism." A report by Miss Zanetti, an inspector under the Infant Life Protection Act, dealing with the homes of children boarded out, stated that in most of the cases the conditions were unsatisfactory. In such matters almost everything depends on the individual factor. The results in a clean, well-conducted home managed with common-sense and sympathy will be better than in a cottage where the husband drinks and the wife is a dirty slattern. But, on the other hand, if only the right people can be found the closest possible approach is made to the family life which is to be aimed at, while the gradual growth of home interests and affections gives a stability and a social foothold that is seldom or never felt by the child who grows up simply as one unit in a multitude, where individual peculiarities and tendencies are almost necessarily ignored.

LYMPHATIC LEUKÆMIA COMBINED WITH PULMONARY TUBERCULOSIS.

BUT few cases of combined leukæmia and tuberculosis have been recorded. The *American Journal of the Medical Sciences* for June contains a case published by Dr. E. R. Baldwin and Dr. J. A. Wilder with an account of the literature of the subject. Volpe has reported two cases and reviewed six. Cases are described by Quincke and Stintzing and are mentioned by Lichtheim who also observed a case of the spleno-medullary form terminating in acute tuberculosis. A man, aged 47 years, was admitted to the Adirondack Sanatorium on June 8th, 1895. Both his parents and five maternal aunts and uncles had died from tuberculosis. In March he had been treated for tonsillitis, the cervical

glands became swollen, and dulness and râles were observed at the apex of one lung. On June 11th he was moderately anæmic, the temperature was normal, the cervical glands were enlarged, and there were signs of consolidation at the apices of both lungs. In February, 1898, the axillary and inguinal glands were enlarged. He was discharged in May with the chest disease arrested. In September he had diarrhœa and the cough and expectoration had increased. The faucial and lingual tonsils were enlarged and the posterior nares were obstructed with adenoids. There was broncho-cavernous breathing at the apices of both lungs. The splenic dulness extended nine centimetres from the edge of the ribs towards the umbilicus. The leucocytes in the blood were enormously increased and consisted principally of small lymphocytes. All the accessible lymphatic glands became enlarged. Death from exhaustion occurred on Dec. 10th. In October the leucocytes were 695,000 and the red corpuscles were 3,010,000, in November they were 710,000 and 3,190,000, and in December they were 1,104,000 and 2,666,000. In 5000 leucocytes there were 4907 lymphocytes, 23 polymorphous neutrophiles, 46 large mononuclear and transitional forms, no eosinophiles, and 24 myelocytes. At the necropsy all the lymphatic glands were found to be enlarged. The spleen weighed 900 grammes; the pulp consisted of a dense mass of lymphoid cells; the Malpighian corpuscles were few and showed atrophic and fibroid changes. The lungs contained cavities, caseous spots, and disseminated tubercles.

THE PUBLIC MEDICAL SERVICE IN TRINIDAD.

THE annual report of Mr. F. H. Lovell, C.M.G., Surgeon-General of Trinidad, contains much interesting information relative to the work of the hospitals and public medical service of the colony. The inhabitants in 1897 were reckoned as 252,544; during 1898 there were 7962 births, 6755 deaths, 19,828 immigrants, and 13,062 emigrants, so that there was an increase of population amounting to 7973. The paupers and poor persons who received treatment during the year were 27,319 in number, of whom 21,972 were dealt with as out-patients and 5310 were admitted into the Colonial Hospital and the seven district hospitals, these latter serving as poorhouses even more than as hospitals. The Government medical institutions consist of the colonial hospitals at Port-of-Spain and San Fernando, the seven district hospitals, the lunatic asylum, the leper asylum, and the house of refuge. During 1898 in all these taken together there were 13,124 admissions, 11,321 discharges, and 1804 deaths. Of the causes of death at the nine hospitals the largest number under any one heading was 438, due to "diseases of the digestive system" (including dysentery); 109 deaths were ascribed to anæmia, 21 to influenza, 32 to enteric fever, 71 to malarial fever, 34 to ankylostoma, 21 to tetanus, seven to leprosy, and one to beri-beri. A large number of cases of yaws were treated during the year, and there were 381 remaining on the last day of the year; at D'Abadie near Arima the disease has become so prevalent that it has been found necessary to establish a yaws hospital there to accommodate 40 patients. At the lunatic asylum there were during the year 120 admissions, 43 discharges, and 77 deaths. At the leper asylum there were 233 patients remaining on Dec. 31st, 1897. During 1898 there were 83 patients (72 males and 11 females) admitted: 35 died, three were discharged at their own request, two were transferred to the lunatic asylum as dangerous, and 11 absconded. Of the 83 cases admitted 53 were anæsthetic, 26 were tubercular, three were mixed, and one was doubtful. A patient who died from influenza in his forty-third year on April 5th, 1898, had been admitted in August, 1868. A man, aged 70 years, who died from Dec. 15th, 1898, had been admitted in 1877; the medical superintendent's remark on this case is: "The *doyen*. Illustrative of the fact that a case of anæsthetic leprosy has only to be long enough in contact with tubercular cases to become 'mixed.'"

PAROTITIS AND ITS NERVOUS SEQUELÆ IN PREGNANCY.

PAROTITIS has been known to be accompanied in some cases by distinct nervous sequelæ which may be divided into three categories: (1) facial paralysis caused by direct involvement of the facial nerve in the parotitis; (2) cerebral or meningeal involvement with subsequent paralysis (of this condition six cases have been recorded—viz., four by Lannois and Lemoine and one each by Glénerau and Liégeois); and (3) peripheral neuritis with paralysis such as may be caused by any infectious disease. An example of the last class is reported by Dr. Louis Gallarvardin[1] under circumstances of special interest. A woman, aged 37 years, who was seven and a half months pregnant, was attacked with mumps affecting both parotid glands. The swelling of the glands had disappeared at the end of a week, when she began to suffer from pruritus of the whole body but especially of the extremities. This lasted for four or five days and was succeeded by pains in the arms and legs, soon after which general weakness made its appearance and increased until she became almost helpless and bedridden. On examination there were found an almost complete paresis affecting the entire body and a diminution of cutaneous sensibility and of muscular sense of the extremities which grew less marked towards the trunk. The knee-jerks and plantar reflexes were abolished. The action of the sphincters and the mental condition remained normal. The patient grew worse for a fortnight longer. At the end of this time labour set in and she was delivered of a living male child. After the confinement she began to improve gradually and continuously and in two months' time it was noticed that muscular power was very good. Coördination, however, was still very bad, and this was so markedly the case in the legs that she was quite unable to walk. Her subsequent improvement as regards coördination of movement was very slow indeed, as for nearly three months there still remained marked ataxia of the arms and legs. The knee-jerks also remained absent for a long time before definite recovery could be chronicled, but ultimately her recovery was almost complete.

AN AFRICAN MYSTERY.

AFRICA is perhaps the most unknown continent on the face of the globe and although it has yielded some secrets there are still many unintelligible mysteries in regard to both territory and inhabitants. Captain Wellby, who has just returned from an exploration of a hitherto unknown district of Abyssinia, has communicated to a Reuter's representative some strange experiences, the most interesting portion of which from our point of view deals with a district the visitors to which are said to become possessed. In Captain Wellby's words:—

One of the most weird and remarkable scenes I ever witnessed was in Walamo, some fortnight's journey south of Adis Abeba. The place had an evil reputation, and I had frequently heard that any persons venturing to enter the country became the special prey of demons—in fact, became possessed by demons. Of course, I pooh-poohed the idea, but nevertheless it made me more determined than ever to go there. ..... The inhabitants I found to be most friendly, although they told me they had never seen a white man before. So far all had gone well, and I was more certain than ever that the evil reputation of the place was only based on superstitious nonsense. I do not say that subsequent experience has left any very

[1] Lyon Médical, No. 98, 1898, p. 97.

clear idea in my mind and I can in no way explain the marvellous phenomena which I witnessed. I only state the facts. The first sign of anything wrong was when one of my Somali escort rushed into camp shouting "Walamo," "Walamo." He was frightfully excited; he shook violently and kicked like a madman and in the intervals between his shrieks he told me that he was possessed by a devil. The whole of that night he was neither more nor less than a maniac, but next day he was perfectly well. I had been previously told that once a man had become a "Walamo" or devil-possessed he was always liable to a second attack and as a simple measure of precaution the man's rifle was taken from him. While on the march he had another access of this curious madness in the course of which he drew a knife and rushing about threatened to kill everybody. It took several men to hold him down. It is supposed to be especially dangerous to eat food in the presence of the "Walamo" people and on one occasion one of my Soudanese saw a Walamo gazing intently upon him while he was having his meal. Nothing untoward occurred at the time, but two days later this man became a raving lunatic. ..... Eventually he had to be tied up, but the next day he was perfectly well. Thinking I could perhaps do something to explain these extraordinary occurrences I resolved to eat solemnly a meal in the presence of the Walamo myself. When all was prepared I had something like a hundred of these people watching me. In due time the meal was over and I thought no more about it. Here I should state that I had not had a day's illness during the journey and was in the best of health at the time. The next day, however, I felt thoroughly ill. Needless to say I did not let any of my people know that anything was wrong nor can I attempt to explain the cause. I was quite unable to find a cause for this mysterious business. As I said before, I merely confine myself to a bare statement of the facts.

As for explanation, so far as we can see there is none. Emotion and a consciousness of the evil reputation of the country might possibly explain the occurrence in the case of the Somali and the Soudanese, but this explanation would hardly hold in the case of an avowed unbeliever like Captain Wellby.

CITY OF GLASGOW FEVER AND SMALL-POX HOSPITALS.

THE annual report of these hospitals by Dr. Alexander Johnston, physician-superintendent, shows that during the year ending May 31st, 1898, there were admitted 5216 patients, of whom 2575 (or 49·36 per cent.) were males and 2641 (or 50·63 per cent.) were females. The general mortality was 10·6 per cent., that for males being 11·3 per cent. and for females 9·9 per cent. Of the whole number 3434 (or 65·9 per cent.) were under 10 years of age, 1295 (or 24·7 per cent.) were between 10 and 25 years, and 487 (or 9·4 per cent.) were over 25 years. The classification according to diseases was as follows: scarlet fever, 2448; diphtheria, 174; enteric fever, 589; typhus fever, 76; small-pox, 57; chicken-pox, 55; measles, 878; whooping-cough, 521; erysipelas, 62; unclassified infectious diseases, 40; unclassified non-infectious diseases, 214; nursing mothers, 102. The scarlet fever admissions being 2448 and the deaths 127, the percentage mortality was 5·1. Of a total of 225 cases admitted to the diphtheria wards 174 proved to be diphtheria, the remaining 51 (or 22·6 per cent. of the total) being classified as scarlet fever, tonsillitis, measles, pneumonia, enteric fever, laryngitis, and "nil." Among the 174 cases of diphtheria treated there were 12 intubations, with six deaths; 15 tracheotomies, with nine deaths; and 10 tracheotomies, with six deaths, after unsuccessful intubation. Of the 174 cases 40 (or 22·9 per cent.) terminated fatally, eight of the patients dying within 24 hours. All cases were treated with the antitoxic serum. Cutaneous rashes associated with the use of the antitoxin appeared at dates varying from seven to 14 days after the first injection in 40 cases (22·9 per cent.). There were 76 cases of typhus fever admitted and seven of the patients died, giving a mortality rate of 9·2 per cent. Dr. Johnston says of this disease: "It is still as fatal in old persons as formerly, but in all classes the type seems to have changed, the characteristic features are less well-defined, and the clinical resemblance to other diseases (e.g., enteric fever) becomes closer." Dr. R. S. Thomson of the Small-pox Hospital says that of the 57 cases of small-pox 52 patients were vaccinated (mortality 3·8 per cent.), and five were either unvaccinated or doubtful, of whom three died. One of these latter cases was probably a case of intra-uterine infection as the eruption appeared on the eighth day after birth in the hospital. The child had been successfully vaccinated at birth and showed concurrent vaccinia and small-pox; death was directly due to patency of the ductus arteriosus. Dr. Thomson also makes a short reference to the disease resembling small-pox from which a crew of Lascar seamen suffered; a full account of these cases was published by him and Dr. John Brownlee in THE LANCET of Oct. 22nd, 1898.

FINE FOR EXPOSING A CHILD WHEN SUFFERING FROM SCARLET FEVER.

THE Stowmarket magistrates have very properly fined Mr. Philip Ward, Bakers' Arms, Stowmarket, 2*s.* 6*d.*, and the costs of the prosecution by the urban district council, which were £1 10*s.* 6*d.*, for exposing his child when suffering from an infectious disorder without proper precautions. The case was one of scarlet fever. The mother was duly warned against letting the child go out both by the medical officer of health and by Dr. Charles William Low. Dr. Low testified that he was not the regular attendant. The child was taken to him by the schoolmistress ten days after having a rash and with signs of fever on the hands. He ordered the child to be taken home and called specially to tell the parents not to send the child out, but to send for their own medical attendant who had previously seen the child. Instead of doing this they took the child to the house of the practitioner as they had done twice before. Such perverse persistency in disregarding advice and warning deserves a severer punishment than that which was inflicted. The only shadow of a defence was that when the child was taken to Mr. Harper, the family medical attendant, he said that the child was not suffering from scarlet fever. But this was not made apparent at the hearing, and even if it had been the parents had disregarded the warning of two medical men.

"NERVOUS" ERUCTATIONS AND SKIAGRAPHY.

DR. ALBERT ABRAMS of San Francisco[1] recognising the frequency of "nervous" belching in hysterical and neurasthenic persons, noted also that the gases eructated were usually tasteless and odourless and consisted practically of swallowed air. The upward movement of the gas in "nervous" belching was believed by Bristowe to be due to a contraction of the muscles of the neck which rendered patent for a while the upper end of the œsophagus, a view which was accepted by so great an authority as Ewald.[2] Various views had, however, been expressed by different clinical observers about the causation of this symptom, and to put it to the test of direct observation Dr. Abrams conceived the plan of examining the patient (during the process of eructation) by the method of Roentgen rays on the fluorescent screen. On carrying this out on a patient who had attacks of hysterical belching it was found that the stomach appeared to be distended and the left vault of the diaphragm seemed to be pushed upwards. "The respiratory excursions of the diaphragm were slight and the respiratory displacement of the stomach was correspondingly shallow." By

[1] Philadelphia Medical Journal, August 12th, 1899.
[2] Diseases of the Stomach, 1892, p. 417.

means of suggestion and by pressure on the hysterogenic zone an upward expulsion of gas was caused to such an extent that the vault of the diaphragm and the heart resumed their normal positions in the left hypochondrium, while the stomach seemed to recede, maintaining, however, a condition of moderate distension. "Nervous eructations" now began to take place and were loud and continuous. "Prior to each eructation the diaphragm descended slightly, about one-fifth of its descent in ordinary inspiration, but the contours of the stomach remained unchanged and continued so during the entire skiagraphic examination." It was thus seen that the stomach did not participate in the acts of "nervous" eructation. The eructations rose from the œsophagus alone, and this was further borne out by the fact that the introduction of a soft open tube into the œsophagus stopped the contractions of the œsophagus and put an end to the belching.

THE OPEN-AIR TREATMENT OF TUBERCULOSIS.

WE publish in another column some information concerning existing British open-air sanatoria for patients suffering from tuberculosis who are able to pay for their treatment. It is remarkable that about one-third owe their existence to the enterprise of medical women, amongst whom Dr. Jane Walker holds an honourable place. All but two are in the open country and these two are in the well-favoured town of Bournemouth. The east coast, so well known for its dry, bracing climate, possesses two and will soon have a third under the direction of Dr. Burton-Fanning. In the west of England there are two excellent establishments, on the Mendips and the Cotswolds respectively. Both of these are at a considerable elevation (for England) above the sea-level, as also is the colony at Crowborough. Others are situated respectively on the edge of the New Forest, on the slopes of the Malvern Hills, and on the Sussex moors, while yet another will shortly be opened on the pine-clad hills which look towards the Hindhead in Surrey. In Ireland a sanatorium has been recently started at Rostrevor, but in Scotland, the pioneer in open-air sanatoria for the poor, we know of none for the middle and upper classes. Nearly all the existing British institutions have had to increase their accommodation owing to the large demand for beds. Most of them have been greatly influenced by the methods of Dr. Walther of Nordrach in Germany. The fees payable vary from two to seven guineas per week, although we believe that a few beds for the middle classes can occasionally be had for less. Small fees can only be remunerative where the accommodation is very simple, unless electric lighting and other heavy items of expense are omitted. It is, therefore, highly creditable that several of these establishments have been started by medical practitioners for scarcely remunerative fees.

THE CONGRESS OF THE SANITARY INSTITUTE.

A NUMBER of interesting questions have been brought before the Congress of the Sanitary Institute, opened at Southampton on August 29th. Sir W. H. Preece, President of the Congress, in his inaugural address, delivered in Hartley Hall, dealt chiefly with the relation of bacterial life to health and disease in the human race and concluded with a reference to the utility of electricity as a means of propelling tramcars and lighting houses. On August 30th eight conferences were held, most of them taking place in the rooms of the Hartley College, whilst others met in the municipal buildings and in King Edward VI. Grammar School. Mr. Millar Wilkinson, C.E., chairman of the Port of London sanitary authority, who presided at the conference of port sanitary authorities, explained the importance of the work carried on by these bodies, which formed the only protection of the country against the importation of disease. Dr. Hope (Liverpool) in a paper on Vaccination and Small-pox said that any considerable prevalence of small-pox in a seaport town was very detrimental to commerce on account of the restrictions placed on vessels proceeding thence to other countries. Alderman T. Walton, chairman of the Health Committee of the Southampton Corporation, presided over the conference of municipal representatives. Viscountess Harberton, the well-known advocate of "rational dress," discoursed on this theme to an audience of ladies. The section of Sanitary Science and Preventive Medicine met on August 31st when Alderman Sir Joseph Ewart, M.D., the President, delivered an interesting address on the various improvements in public health due to the development of sanitary knowledge. Dr. W. J. Simpson afterwards gave an address on Plague which is published in the present issue of THE LANCET. Papers were also read by Mr. J. Cantlie on the Prevention of Malarial Diseases, by Dr. F. R. Walters on the Construction of Sanatoria for Consumptives, and by Dr. Heron on the Recognition and Isolation of Pulmonary Consumption. In connexion with the Congress there is a Health Exhibition which will remain open for three weeks.

THE London Hospital has received £10,000 from Mr. Edward Raphael towards the endowment of a new ward and £60,000 from the executors of the late Baroness de Stern towards the establishment of a Convalescent Home.

MRS. JOHN LAIRD of Oakhurst, Birkenhead, has presented the Birkenhead Borough Hospital with the sum of £500 "in memory of Mr. John Laird, who was for 38 years honorary treasurer of that institution."

THE final report of the Departmental Committee on Dangerous Trades has been issued as a Blue-book. We shall refer to the subject at length in a future issue.

SIR MICHAEL FOSTER, K.C.B., M.D., will deliver the Presidential Address at the forthcoming meeting of the British Association.

SEWAGE OF BATH.—A considerable amount of money has been spent upon the proposed sewage scheme for Bath. Land has been purchased at Saltford, where it was proposed that the sewage should be intercepted and chemically treated. The Local Government Board have recently stated that they are not prepared to entertain any proposal as to a partial scheme for sewage disposal, and consequently for the present the matter is in abeyance. Apparently the only effective manner of disposing of the sewage of Bath without sending it into the river is for the authorities of that city to join in the Bristol scheme and take the sewage through a large drain in the centre of the river to the Bristol Channel. The Bristol authority has approached the Bath Corporation upon the matter.

INFECTIOUS DISEASES HOSPITAL FOR SYDNEY.—While Melbourne has decided on a site for its hospital for infectious diseases Sydney is still discussing the matter, and Dr. Ashburton Thompson, the chief Government medical officer, has recently prepared a report on the subject. He observes that to be of service such a hospital must be accessible, and "there is beyond doubt no fear of the spread of infectious disease from such an institution when properly arranged and constructed." He advises that a site selected near Kensington on the Boomerang-road is suitable, but a better one would be on Sydney Common as being more central. The Glebe Municipal Council also requested the Government to try to prevent cases of typhoid fever and other infectious diseases from being admitted to the Hospital for Children at Glebe. Dr. Thompson in reporting on this matter stated that the hospital was "quite within its rights and was only discharging the function it was appointed to perform" in admitting such cases.

PLAGUE PROSPECTS.

THE question of the hour for the epidemiologist and for the public health administrator is as to whether bubonic plague will shortly obtain a foothold in this country, and, if so, whether the disease will tend to behave in anything approaching the manner in which it manifested itself in the great plague of London in 1665. In endeavouring to discuss this matter we are met with the consideration that it is by no means improbable, could the precise truth as to the spread of plague in the past be ascertained, that the disease would have been found to have travelled more frequently *vid* localities in which its existence had not at the time been declared than *vid* those places known to be already infected and against which precautions of one or another description had been taken. As to the presence of plague in at least two countries on the homeward route from India there can be no manner of doubt, but the question naturally arises whether the disease in an unrecognised form is not already present in countries and places other than those from which it has been officially notified under the terms of the Venice Convention. We are perfectly aware that this is in a sense mere surmise, but as such it is based in no small degree upon the history of the past, which teaches that when the presence of plague has once been officially admitted it has in not a few instances subsequently become known that the disease in a modified, or at least unrecognised, form has existed for some time previously and are we not at this juncture awaiting with interest the developments as regards the mysterious "Indian typhoid" announced to be prevalent at Lisbon? If this be the case it is not altogether improbable that at the present moment vessels from what are practically infected ports are reaching our shores, and hence persons suffering from what is known as *pestis ambulans* may be passing unsuspected into our midst—a condition of things which quarantine, dealing as it does with the known alone, is powerless to prevent and which can only be successfully controlled by a continued and conscientious medical supervision of the passengers and crews of vessels both on board and, for a time, on shore.

As far as this country is concerned there is no evidence whatever pointing to even the suspicion that plague is with us, and we raise the issue here mainly with the object of indicating to port medical officers of health and to Customs officials the desirability of casting, as it were, a wide net, and of interpreting the terms of the Plague Order of the Local Government Board in a sense which will enable them, where necessary, to "have reason to suspect" a vessel as harbouring infection; indeed a hearty coöperation of the officials of Her Majesty's Customs with those of our port sanitary authorities is absolutely necessary for successfully carrying out the English methods. So, too, it will be well that medical officers of health throughout the country, more particularly in large seaport towns, should scrutinise very closely the death returns at the present time, and that they should regard with circumspection undue elevation of any suspicious factors in the death-rate. Obviously the conditions which obtain at the present time are but very little comparable with those which flourished when the "great pestilence" burst upon the metropolis in the seventeenth century, but it is nevertheless well to recall to mind the manner in which, according to the narratives of Defoe and others, the deaths from plague in May of that fatal year, 1665, were in the first instance returned under headings such as "spotted typhus" and how it was only after detailed investigation had been made that the actual state of affairs became apparent. In this connexion, however, the remark attributed to Heberden, that "on first breaking out the disease has never been known to be plague," should be cited.

Assuming for the moment that plague obtains an entry into this country, how is it likely to conduct itself? To guide us to an answer we may turn to the old Bills of Mortality, as set out in Dr. Payne's introduction to that fascinating and comprehensive description of the plague which was written in 1666 by one William Boghurst, an apothecary who exercised his calling during the plague of London, and which has been printed from the manuscript in the British Museum by the liberality of the Epidemiological Society of London. The monthly figures show one burial from plague during February, two during April, and 43 during May, the burials rapidly rising month by month until September when a total of 26,230 was reached, the numbers falling in December to 734, the figures for the whole year being 68,596. This seasonal curve would appear to afford some indication that with the approach of colder weather and under the conditions which obtain here the chances of plague spreading in this country during the current year may diminish as its end approaches, and this view receives some confirmation from the general conclusion at which Hirsch arrives that "extremes of heat and cold mostly cause the extinction of the epidemic, or are little favourable to it breaking out." But in judging of this question it is important to remember that in the seventeenth century this disease was practically endemic in London and that epidemics had occurred in 1603, when 33,347 deaths took place, and in 1625, when there were 41,313 deaths, while in 1663 12 deaths occurred and in 1664 four deaths. It is therefore clearly open to debate whether in 1665, as the contagionists asserted, there was a fresh importation of the disease or only, as the localists contended, the advent of certain suitable meteorological conditions which enabled the organism of the plague to flourish as it did.

But how is plague likely to be modified or controlled by the sanitary progress and organisation of the last half century? In 1665 there were no port or inland sanitary authorities; there were no notifications and no means of disinfection, while in place of isolation there was the shutting up of the sick and healthy together. Now, on the other hand, we have a well-equipped port sanitary service whose function it is to separate the sick from the healthy at our ports and, what is perhaps of equal importance, to notify forward the names and addresses of persons who have left infected or suspected vessels. We have, too, a system of compulsory notification of infectious disease which is shortly to become general throughout the country, and, moreover, a system of isolation and disinfection which although, unfortunately, by no means as general as could be wished, is nevertheless calculated to be of very great value. There is, too, Mr. Haffkine's prophylactic to fall back upon, and we may rest assured that the Local Government Board is not allowing the grass to grow under its feet in this particular, but that a plentiful supply will in all probability be forthcoming when the necessity for its use arises. And, lastly, we possess the knowledge which in 1665 was but very imperfectly comprehended, that plague may manifest itself in a mild and not easily recognisable form, more particularly at the commencement of an epidemic, and we are in a position to organise a system of search after such cases which, in the event of necessity for action arising, would prove of the highest utility in a prophylactic sense. With all this machinery, and assuming always that it is adequately manned and worked, we are surely in a position to prevent a death-rate from plague of such magnitude as occurred in 1665, and we may console ourselves with the belief that if plague takes hold of a community here and there it will be in places where the sanitary authorities have failed in their duty and have neglected the oft-repeated advice of the central health authority of this country.

CHANGES IN THE MEDICAL SCHOOLS.

St. Bartholomew's Hospital.—Dr. Ormerod has replaced Dr. West in the skin department. Mr. Horder has replaced Dr. Batten as casualty physician. Dr. Calvert has been appointed joint lecturer on materia medica, pharmacology, and therapeutics. Mr. Furnivall has resigned his post of demonstrator of anatomy on his appointment as assistant surgeon to the London Hospital. Mr. Ll. P. Phillips has been appointed demonstrator of anatomy. Mr. Mundy, Dr. Rawling, and Mr. Douglas have been appointed assistant demonstrators of anatomy. Dr. Langdon Brown has succeeded Dr. Gladstone Clark as assistant demonstrator of physiology. Mr. Elmslie and Mr. F. N. White have been appointed assistant demonstrators of biology. Dr. Horne and Mr. F. A. Bainbridge have been appointed assistant demonstrators of pathology. Mr. R. C. Bailey has succeeded Mr. McAdam Eccles as demonstrator of operative surgery. Mr. Waring has succeeded Mr. Berry as demonstrator of practical surgery.

Charing Cross Hospital.—Dr. Galloway succeeds Dr. Arkle as assistant physician to the hospital and vice-dean to the

Medical School. Dr. Hunter has been appointed lecturer on practical medicine and physician to the electrical department, and Dr. Bosanquet has become medical tutor. Dr. Eden has been appointed assistant obstetric physician and tutor in obstetrics and gynæcology. Mr. Gibbs's labours and successes as senior demonstrator of anatomy have been recognised by the additional title of lecturer on practical anatomy. The council of the hospital has instituted the office of bacteriologist to the hospital; and to this appointment, as well as to that of lecturer on bacteriology to the Medical School, Dr. Eyre has been unanimously chosen. At the hospital Mr. Montgomery has been appointed resident medical officer and Mr. Daniel surgical registrar.

King's College, London.—Dr. Raymond Crawfurd has been appointed assistant physician, vice Dr. Duffin, who has become consulting physician. Dr. Whitfield has been appointed assistant physician to the skin department, vice Mr. A. Carless resigned. Dr. G. F. Still has been appointed assistant physician to the out-patient children's department. Mr. Cargill has been appointed assistant ophthalmic surgeon with sole charge of the ophthalmic out-patient department. Mr. Arthur Cheatle has been appointed assistant aural surgeon in charge of the aural out-patient department conjointly with Dr. Urban Pritchard, aural surgeon. Mr. C. E. Wallis has been appointed assistant dental surgeon in charge of the dental out-patient department conjointly with Mr. A. S. Underwood, dental surgeon.

Middlesex Hospital.—In the Hospital: Dr. Sidney Coupland has resigned his position on the medical staff on being appointed a Commissioner in Lunacy; Dr. H. C. Thomson has been appointed pathologist, vice Dr. Voelcker resigned; and Dr. R. A. Young has been appointed medical registrar vice Dr. Thomson. In the Medical School: Sir R. D. Powell, Bart., and Dr. J. K. Fowler have been appointed lecturers in medicine, vice Dr. Coupland, resigned. Mr. T. H. Kellock has been appointed joint lecturer in practical surgery with Mr. Gould. Dr. W. E. Wynter has been appointed lecturer in pharmacology, vice Dr. Biss, resigned. Mr. Foulerton has been appointed teacher of bacteriology and lecturer in public health, vice Dr. Pasteur, resigned. Dr. Crombie (late I.M.S.) has been appointed lecturer in tropical medicine, vice Surgeon-General Cayley, resigned. The following demonstrators have been appointed: Pathology, Dr. Campbell Thomson; bacteriology, Mr. C. Reissmann; anatomy, Dr. Gladstone and Mr. W. W. James; physiology, Mr. J. S. Goodall and Mr. A. E. Pinniger; chemistry, Mr. G. E. Fuggatt; biology, Mr. J. S. Goodall.

London (Royal Free Hospital) School of Medicine for Women.—Dr. J. W. Carr, assistant physician to the Royal Free Hospital and physician to the Victoria Hospital for Children, Chelsea, has been appointed joint lecturer in medicine in place of Dr. Donkin resigned. Mr. G. P. Mudge has been appointed lecturer on biology. Miss E. A. Stoney has been appointed lecturer on physics. Dr. W. J. Simpson, professor of hygiene at King's College, has been appointed lecturer on public health.

Mason University College, Birmingham: Queen's Faculty of Medicine.—Professor R. F. C. Leith has been appointed to the chair of Pathology. Dr. E. W. Wace Carlier has been appointed to the chair of Physiology, vice Professor Allen, resigned. Mr. J. T. J. Morrison has been appointed Professor of Forensic Medicine in place of Dr. R. M. Simon, thus creating a vacancy for the post of assistant to the chair of Surgery. Mr. Dencer Whittles has been appointed lecturer on dental histology and pathology, this being a newly-created position. Mr. Frank Barnes has been appointed lecturer on osteology and chief demonstrator of anatomy in place of Dr. Manners Smith, resigned. The petitions for a Charter for the new University of Birmingham, towards the founding of which nearly £300,000 have been subscribed during the last twelve months, have been lodged in the Privy Council Office and it is hoped that the Charter will be granted in the immediate future.

University College, Cardiff: Medical Faculty.—Mr. J. R. Cotter has been appointed an additional assistant in the department of physics. Professor E. A. Schäfer and Professor A. W. Hughes have acted as external examiners in physiology and anatomy respectively at the last B.Sc. examination of the University of Wales.

University College, Liverpool.—Dr. Henry Briggs has been appointed Professor of Midwifery and Gynæcology in succession to the late Dr. Wallace. Dr. T. B. Grimsdale has been appointed lecturer in clinical gynæcology. Major Ross, I.M.S., has been appointed lecturer in tropical medicine. Dr. Laslett has been appointed demonstrator of physiology. Dr. Armour has been appointed demonstrator of anatomy. Dr. Willett has been appointed obstetric assistant. Dr. Hugh R. Jones has been appointed demonstrator of bacteriology and tutor in public health. Dr. Annett has been appointed demonstrator of tropical medicine. The following changes in the infirmary staff have been made: Mr. Lowndes becomes consulting surgeon to the Lock Hospital and Dr. T. B. Grimsdale becomes gynæcological surgeon in place of the late Dr. Wallace.

Queen Margaret College, Glasgow.—There have been no changes in the staff since last October, except that Dr. W. B. Brodie assists Professor McKendrick in the physiology classes now.

University of Glasgow.—Dr. Robert Muir has been appointed Professor of Pathology in succession to the late Dr. Joseph Coats.

Catholic University School of Medicine, Dublin.—Dr. Campbell (Professor of Chemistry) has resigned. Dr. Frengley (Assistant to the Professor of Chemistry) has also left the staff.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6776 births and 5868 deaths were registered during the week ending August 26th. The annual rate of mortality in these towns, which had been 24·3 and 25·7 per 1000 in the two preceding weeks, further rose to 26·8. In London the rate was 24·1, while it averaged 28·7 in the 32 provincial towns. The lowest death-rates in these towns were 20·8 in Croydon, 21·2 in Huddersfield, 21·7 in Wolverhampton, and 21·9 in Halifax; the highest rates were 33·7 in Manchester, 35·5 in Burnley, 36·7 in Liverpool, and 38·0 in Salford. The 5868 deaths in these towns included 1919 which were referred to the principal zymotic diseases, against 1597 and 1765 in the two preceding weeks; of these, 1587 resulted from diarrhœa, 105 from measles, 72 from diphtheria, 71 from whooping-cough, 58 from "fever" (principally enteric), 25 from scarlet fever, and one from small-pox. The lowest death-rates from these diseases were recorded in Croydon, Birkenhead, Huddersfield, Halifax, and Newcastle, and the highest rates in Brighton, Portsmouth, Liverpool, and Burnley. The greatest mortality from measles occurred in Manchester, Salford, Burnley, Sheffield, and Sunderland; from scarlet fever in Derby; from whooping cough in Portsmouth, Huddersfield, Leeds, and Gateshead; from "fever" in Birkenhead and Blackburn, and from diarrhœa in Brighton, Portsmouth, Birmingham, Liverpool, Manchester, and Burnley. The 72 deaths from diphtheria included 29 in London, seven in Sheffield, five in Liverpool, four in West Ham, four in Birmingham, four in Leicester, and four in Leeds. One fatal case of small-pox was registered in Hull, but not one in any other of the 33 large towns, and no small-pox patients were under treatment in any of the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday, August 26th, was 2547, against numbers declining from 2704 to 2612 on the three preceding Saturdays. The deaths referred to diseases of the respiratory organs in London, which had been 163 and 148 in the two preceding weeks, rose again to 170, and were 14 above the corrected average. The causes of 44, or 0·7 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Portsmouth, Manchester, Leeds, and in 12 other smaller towns; the largest proportions of uncertified deaths were registered in Plymouth, Leicester, Liverpool, Halifax, and Gateshead.

In 33 of the largest English towns 6657 births and 5571 deaths were registered during the week ending Sept. 2nd. The annual rate of mortality in these towns, which had risen from 24·3 to 26·8 per 1000 in the three preceding weeks, declined last week to 25·5. In London the rate was 22·1 per 1000, while it averaged 27·7 in the 32 provincial towns. The lowest death-rates in these towns were 18·5 in Bristol, 18·6 in Swansea, 18·8 in Croydon, and 19·7 in Blackburn; the highest rates were 34·3 in Brighton, 34·6 in Wolverhampton, 36·8 in Salford, and 38·1 in Preston. The 5571 deaths in these towns included 1743 which were referred to the principal zymotic diseases, against 1761 and 1918 in

the two preceding weeks; of these, 1441 resulted from diarrhœa, 83 from whooping-cough, 69 from measles, 62 from fever (principally enteric), 61 from diphtheria, 26 from scarlet fever, and one from small-pox. The lowest death-rates from these diseases among the towns occurred in Plymouth, Derby, and Birkenhead, and the highest rates in Salford, Brighton, Preston, and Burnley. The greatest mortality from measles occurred in Sheffield and Burnley; from whooping-cough in Leeds, Leicester, Huddersfield, and Burnley; from "fever" in Huddersfield and Brighton; and from diarrhœa in Salford, Wolverhampton, Burnley, Brighton, and Preston. The mortality from scarlet fever showed no marked excess in any of the large towns. The 61 deaths from diphtheria included 29 in London, five in Leeds, four in Liverpool, three in Preston, and three in Sheffield. One fatal case of small-pox was registered last week in Hull, but not one in any other of the 33 towns; and no small-pox patient was under treatment in the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, Sept. 2nd, was 2537, against 2674, 2612, and 2547 at the end of the three preceding weeks; 252 new cases were admitted during the week, against 227, 245, and 225 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 148 and 169 in the two preceding weeks, fell again to 131 last week, but were 12 above the corrected average. The causes of 61, or 1·1 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Leeds, Hull, Newcastle-on-Tyne, and in 11 other smaller towns; the highest proportions of uncertified deaths were registered in Liverpool, West Ham, and Leicester.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 17·9 and 19·3 per 1000 in the two preceding weeks, further rose to 22·6 during the week ending August 26th, but was 4·2 per 1000 below the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 17·1 in Greenock and 17·5 in Aberdeen to 25·4 in Perth and 31·1 in Paisley. The 689 deaths in these towns included 150 which were referred to diarrhœa, 13 to measles, 13 to "fever," eight to scarlet fever, seven to whooping-cough, and five to diphtheria. In all, 196 deaths resulted from these principal zymotic diseases, against 104 and 163 in the two preceding weeks. These 196 deaths were equal to an annual rate of 6·4 per 1000, which was 2·7 below the mean rate from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had been 70 and 124 in the two preceding weeks, further rose to 150, of which 82 occurred in Glasgow, 16 in Dundee, and 15 in Paisley. The deaths resulting from measles, which had increased from eight to 17 in the three preceding weeks, declined again to 13, and included 12 in Glasgow. The deaths referred to different forms of "fever," which had been six and four in the two preceding weeks, rose again to 13, of which eight were recorded in Glasgow, two in Edinburgh, and two in Paisley. The eight fatal cases of scarlet fever exceeded by two the number in the preceding week, and included five in Glasgow. The deaths from whooping-cough, which had been eight and 10 in the two preceding weeks, declined again to seven, of which four occurred in Glasgow. The five deaths referred to diphtheria showed an increase upon the numbers in recent weeks, and included three in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 49 and 51 in the two preceding weeks, further rose to 61, but were slightly below the number in the corresponding period of last year. The causes of 27, or nearly 4 per cent., of the deaths in these eight towns were not certified.

The annual rate of mortality in the eight Scotch towns, which had risen from 17·9 to 22·6 in the three preceding weeks, further rose to 24·1 during the week ending Sept. 2nd, but was 1·4 lower than the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 16·4 in Aberdeen and 20·5 in Greenock to 25·7 in Paisley and 26·4 in Glasgow. The 736 deaths in these towns included 181 which were referred to diarrhœa, 13 to whooping-cough, nine to "fever," seven to measles, five to scarlet fever, two to diphtheria, and not one to small-pox. In all, 217 deaths resulted from these principal zymotic diseases, against 163 and 196 in the two preceding weeks. These 217 deaths were equal to an annual rate of 7·1 per 1000, which was 0·7 below the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had increased from 70 to 150 in the three preceding weeks, further rose to 181 last week, of which 98 occurred in Glasgow, 29 in Edinburgh, 18 in Dundee, 11 in Greenock, and 10 in Leith. The 13 deaths referred to whooping-cough exceeded by six the number in the preceding week and included eight in Glasgow and four in Edinburgh. The fatal cases of "fever," which had increased from four to 13 in the two preceding weeks, fell to nine last week and included six in Glasgow. The deaths from measles, which had declined from 17 to 13 in the two preceding weeks, further fell to seven, of which five occurred in Glasgow. The five deaths from scarlet fever all occurred in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had increased from 49 to 61 in the three preceding weeks, further rose to 83 last week and were 11 above the average in the corresponding period of last year. The causes of 29, or nearly 4 per cent., of the deaths in these towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate of Dublin, which had been 31·9 and 34·9 in the two preceding weeks, declined again to 30·9 during the week ending August 26th. During the four weeks ending August 26th the death-rate in the city averaged 32·8 per 1000, the rate during the same period being 24·6 in London and 18·3 in Edinburgh. The 207 deaths registered in Dublin during the week under notice showed a decrease of 27 from the number in the preceding week, and included 66 which were referred to the principal zymotic diseases, against 62 and 63 in the two preceding weeks; of these, 39 resulted from diarrhœa, 18 from measles, six from "fever," two from scarlet fever, one from whooping-cough, and not one either from small-pox or diphtheria. These 66 deaths were equal to an annual rate of 9·8 per 1000, the zymotic death-rate during the same period being 6·3 in London and 2·8 in Edinburgh. The deaths resulting from diarrhœa, which had been 43 in each of the two preceding weeks, declined to 39. The fatal cases of measles, which had been nine and 10 in the two preceding weeks, further rose to 18. The six deaths referred to different forms of fever exceeded by four the number in the preceding week. The mortality from whooping-cough showed a marked decline from that recorded in recent weeks. The 204 deaths in Dublin included 59 of infants under one year of age, and 38 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a decline from the numbers in the preceding week. Ten inquest cases and eight deaths from violence were registered and 70, or more than a third, of the deaths occurred in public institutions. The causes of three, or 1·4 per cent. of the deaths in the city were not certified.

The death-rate in Dublin, which had been 34·9 and 30·9 per 1000 in the two preceding weeks, further fell to 30·6 during the week ending Sept. 2nd. During the past four weeks the death-rate in the city has averaged 32·1 per 1000, the rate during the same period being 23·8 in London and 19·4 in Edinburgh. The 205 deaths registered in Dublin during the week under notice were two below the number in the preceding week and included 58 which were referred to the principal zymotic diseases, against numbers increasing from 62 to 66 in the three preceding weeks; of these 38 resulted from diarrhœa, 14 from measles, four from "fever," three from whooping-cough, one from diphtheria, and not one either from small-pox or scarlet fever. These 58 deaths were equal to an annual rate of 8·6 per 1000, the zymotic death-rate during the same period being 5·6 in London and 6·3 in Edinburgh. The deaths referred to diarrhœa, which had declined from 43 to 39 in the two preceding weeks, further fell to 36 last week. The fatal cases of measles, which had increased from nine to 18 in the three preceding weeks, fell again to 14 last week. The deaths from fever, which had increased from two to six in the two preceding weeks, fell again to four last week. The 205 deaths last week included 62 of infants under one year of age and 26 of persons aged upwards of 60 years. The deaths of infants showed an increase, while those of elderly persons showed a decline, from the number recorded in the preceding week. Ten inquest cases and six deaths from violence were registered and 62, or

nearly a third, of the deaths occurred in public institutions. The causes of 17, or more than 8 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Deputy Inspector-General of Hospitals and Fleets Henry Dawson Stanistreet has been promoted to the rank of Inspector-General of Hospitals and Fleets. The undermentioned Fleet Surgeons have been promoted to the rank of Deputy Inspector-General of Hospitals and Fleets:—Herbert Mackay Ellis and Evelyn Richard Hugh Pollard. Staff Surgeon Alexander George Pemberton Gipps has been promoted to the rank of Fleet Surgeon in Her Majesty's Fleet. The undermentioned surgeons have been promoted to the rank of Staff Surgeon in Her Majesty's Fleet:—James Bradley, George Hewlett, George Alexander Waters, William Gordon Stott, Charles Sharman Woodwright, Jonathan Shand, and William Arthur Whitelegge.

The following appointments are announced: — Staff Surgeons: A. G. Andrews to the *Terrible;* A. F. Harper to the *Thunderer;* R. Hardie to the *Eclipse;* J. Bradley to the *Egeria;* G. E. Hewlett to the *Conus;* and J. Shand to the *Brisk.* Surgeons: N. I. Smith and L. Bidwell to Plymouth Hospital; C. Ross to the *Excellent;* R. Hill to the *Duke of Wellington,* for disposal; A. Woollcombe to the *Snipe;* J. G. Corry to the *Seagull;* A. H. Jeremy to the *Phœnix;* W. R. Center to Chatham Hospital; E. G. E. O'Leary to the *Lion;* H. C. Arathoon to the *Widgeon;* F. C. B. Gittings to the *Pembroke;* S. Conner to the *Illustrious;* W. H. Thomson to the *Albacore;* J. W. Craig to the *Niobe;* and C. J. S. Kilsall to the Royal Marine Artillery, Eastney. Mr. Palemon Best, M.R.C.S. Eng., L.R.C.P. Lond. (civilian), to be Surgeon and Agent at St. Ives, Cornwall.

ROYAL ARMY MEDICAL CORPS.

Captain Healy, attached to the Coldstream Guards, has proceeded to Aldershot for duty, and Captain E. B. Powell has joined the Home District for duty with the Coldstream Guards as an attached officer. Major D. M. O'Callaghan, Major O. R. A. Julian, and Lieutenant Nickerson have left for South Africa. The following officers proceed to India for duty:—Lieutenant-Colonel Blennerhassett to Bombay and Lieutenant Norrington and Lieutenant Archer to Bengal. Lieutenant H. E. Haymes and Lieutenant F. J. Brakenridge have been selected for service with the Egyptian Army and have been ordered to join immediately.

INDIA AND THE INDIAN MEDICAL SERVICES.

The services of Captain H. A. L. Hewell, R.A.M.C., and Lieutenant W. T. Barry are placed temporarily at the disposal of the Government of Bombay for employment on plague duty. The services of Major H. D. Rowan, R.A.M.C., are replaced at the disposal of the Government of India in the Home Department. Lieutenant-Colonel T. S. Weir, Bombay Establishment, has been granted the temporary rank of Colonel whilst officiating as Principal Medical Officer, Bombay and Aden Districts, vice Colonel G. W. R. Hay, appointed to officiate as Surgeon-General with the Government of Bombay. Lieutenant-Colonel S. F. Bigger has assumed charge of the civil medical duties of Dera Ghazi Khan. Lieutenant-Colonel C. W. Carr-Calthrop has been promoted to be Colonel.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain James Shaw, 1st Bucks Volunteer Rifle Corps, to be Surgeon-Captain.

VOLUNTEER CORPS.

Artillery: 1st City of London (Eastern Division, Royal Garrison Artillery): Ernest Harry Tipper to be Surgeon-Lieutenant. *Rifle:* 2nd Volunteer Battalion the Suffolk Regiment: Surgeon-Lieutenant Herbert John Hargrave resigns his commission and is appointed Second Lieutenant. 3rd (Cambridgeshire) Volunteer Battalion the Suffolk Regiment: Surgeon-Captain J. P. Atkinson to be Surgeon-Major. 1st Volunteer Battalion the Royal Welsh Fusiliers: Surgeon-Lieutenant L. F. Cox resigns his commission. 4th (Perthshire) Volunteer Battalion the Black Watch (Royal Highlanders): Surgeon-Lieutenant C. W. Howatson to be Surgeon-Captain. 1st Volunteer Battalion the Royal Warwickshire Regiment: Surgeon-Lieutenant G. W. Adams to be Surgeon-Captain. 2nd (Angus) Volunteer Battalion the Black Watch (Royal Highlanders): Surgeon-Lieutenant D. M. Mills retires.

DEATHS IN THE SERVICES.

Robert MacWharrie, Honorary Deputy Inspector-General of Army Hospitals, on August 28th. In 1842 he entered the Army Medical Service and became Surgeon in 1853 and Surgeon-Major in 1862. He was present with the 59th Regiment at the operations before, and the capture of, Canton in 1857 (medal with clasp). He retired in 1867.

Deputy Surgeon-General John Low Erskine, A.M.D., on August 25th, at his residence at Bournemouth. He entered the army in 1854, became Surgeon in 1867, Surgeon-Major in 1873, Brigade-Surgeon in 1879, and Honorary Deputy Surgeon-General in July, 1881. He served with the 4th Regiment in the Crimean campaign, including the siege and fall of Sebastopol (medal with clasp and Turkish medal). He was also in medical charge of the field force under Brigadier Macan sent from Ahmedabad in 1859.

Lieutenant-Colonel John Joseph Greene, retired list, R.A.M.C., at Greystone, co. Wicklow, on August 18th. He joined the Army in 1874, became Surgeon-Major in 1881, and Surgeon-Lieutenant-Colonel in 1894. He served in the Afghan War, 1878–80 (medal); in the Nile Expedition, 1884–85 (medal with clasp and Khedive's star); and in the operations of the Soudan Frontier Field Force in 1885–86.

Surgeon-Major William Coverdale Beaty Eatwell, M.D., F.R.C.P. Lond., of 98, Marina, St. Leonards, late of the Bengal Medical Service, on August 7th, at Church-road, Upper Norwood, in his eightieth year.

WELSH BORDER BRIGADE VOLUNTEER INFANTRY.

All the regiments in the brigade have just completed their annual training in camp at Towyn under Colonel Robinson, 53rd Regimental District. Colonel Duke, P.M.O., N.W. District, Chester, inspected the medical arrangements and was gratified to find drawn up for inspection the bearer company and six sections of regimental stretcher-bearers. In this brigade since 1890 it has always been the custom for the senior medical officer to have entire control of the bearer company and the regimental stretcher-bearers, hence the very perfect state of the medical department.

The results of the last examination for the Royal Army Medical Corps were that 14 candidates only qualified for 28 appointments. Nominations will probably be made to fill the remaining vacancies.

Inspector-General of Hospitals and Fleets (retired) Adam Brunton Messer has been appointed Honorary Physician to the Queen, vice Sir Alexander Armstrong, K.C.B., F.R.S., LL.D., deceased.

FALMOUTH AND PENRYN WATER-SUPPLY.—At a special meeting of the Penryn Corporation held on August 25th the medical officer of health (Mr. Blamey) reported upon the numerous complaints made to him of the water supplied to Penryn by the Falmouth Waterworks Company. After some discussion it was decided to petition the Local Government Board to hold an inquiry on the subject of the water-supply as the corporation cannot remedy the evils complained of and are apprehensive of an outbreak of illness like that at Camborne.

OPENING OF THE QUEEN VICTORIA HOSPITAL, MELBOURNE.—The new hospital for women, officered by medical women and called (in commemoration of Her Majesty's Jubilee) the Queen Victoria Hospital, was formally opened by Lady Brassey on July 5th. In a short address her ladyship said that the fact that medical men were to be associated with the medical women on the staff as consultants gave her considerable satisfaction. When first asked to perform the ceremony she was doubtful whether the women medical officers had sufficient experience to undertake the responsibility of managing a hospital by themselves. When she learned of the appointment of the prominent medical men who formed the consulting staff her doubts were allayed. The hospital will only accommodate 12 patients at present, but there is ample accommodation for out-patients and the arrangements are very complete and quite up to date.

Correspondence.

"Audi alteram partem."

THE REPORTED OUTBREAK OF PLAGUE IN RUSSIA.

To the Editors of THE LANCET.

SIRS,—There would appear now to be little room for doubt that plague has made its appearance in European Russia. The outbreak is at present confined to the village of Kolobovka, in the government of Astrakhan, and near the mouths of the Volga. It was in this neighbourhood that the last appearance of plague in European Russia—the Vetlianka epidemic of 1878–79—occurred. That outbreak, it will be recalled, although extremely severe in the few villages attacked, was entirely confined to them, and there was no general spread of the infection to other parts of Europe. This consideration should do much to lessen any apprehensions with which the present outbreak might be regarded, even were this outbreak not quite overshadowed in interest and in the apprehensions which it arouses by the much nearer epidemic in Portugal. The only disquieting feature in the outlook is the fact that the renewed appearance of plague in Russia is a fresh indication that the infection is month by month becoming more widely spread. Five years ago China was the only known centre of the disease; now there are centres of greater or less activity in China, India, Egypt, Portugal, Russia, and perhaps in East Africa.[1]

In view of the re-appearance of plague in Russia the following details, which have not yet, I believe, appeared in the English press, relating to the outbreak which occurred, it will be remembered, last autumn in Central Asiatic Russia are not only of interest but of considerable importance, pointing as they do to a possible source of infection in the present outbreak. These details have only recently come to my knowledge, partly from a report published by Dr. A. M. Levin, who personally visited the scene of the outbreak, and partly from the minutes of the frequent meetings of the Imperial Commission which the Russian Government despatched at the time to Central Asia under the personal presidency of His Highness the Prince of Oldenburg. For the latter papers I am indebted to the courtesy of Dr. Yassenski, who, after conducting the Russian Plague Commission to India, was appointed in charge of the plague measures in the Khanate of Bokhara.

The scene of the outbreak was Anzob, a village near a pass of the same name which divides the province of Samarkand from the Khanate of Bokhara. It lies on a stream which falls into the Fan-Darya—one of the sources of the Zeriafshan river (which flows through Samarkand). It is 220 versts (or 140 miles) south-east of Samarkand, in a mountainous region most difficult of access and some 6000 or 7000 feet above sea-level. It was at the end of September, 1898, that the authorities first heard of the outbreak and on Oct. 3rd (15th) a medical man, Dr. Aphramovitch, reached the spot. His inquiries elicited the following very interesting facts. At the end of August in a village called Marzitch (16 versts from Anzob) a boy named Shukur, aged 12 years, sickened and died after four days' illness. Ten days after his death his brother Shakir, aged nine years, sickened and he died also on the fourth day of his illness. A few days later their mother sickened and she died on the third day of her illness. These were all the cases in this particular village. Two days after the last death a woman named Ashur Bibi, a relative of the deceased, came over from Anzob. She washed the body of the last patient, took part in the funeral, and received the customary present. Returning to Anzob, she became ill and died on the third day of the illness. After this cases occurred among this woman's relatives and among people who attended her and their funerals. The rapid spread of the disease was ascribed to Divine wrath and one of the villagers, Hassan Rakhimof, induced others to believe that the scourge was sent because in burying Ashur Bibi they had omitted some of the rites prescribed by the Shariat, or traditional Muhammadan law. So the body was exhumed and re-interred with full rites. But the scourge was not stayed. Those who helped in the exhumation died first—among them Hassan himself, his three sons, their mother, his two daughters-in-law, his brother, and his brother's wife and son. The terrible mortality in Anzob may be judged from the fact that out of a population of 387 inhabitants only 150 remained alive on Oct. 3rd—237, or over 61 per cent. of the total, having died in about six weeks. Of 60 families only three escaped without a case.

It would occupy too much space to quote or to discuss the symptoms which the disease presented. Though they differed to some extent from those most frequently met with in plague in India there seems no room to doubt that it was plague, particularly as the bacillus associated with the disease was isolated from some of the cases.

The most interesting question is, How and whence did the infection reach this remote spot? Dr. Levin asserts that it could not have come directly from India. He suggests one or two other possibilities. The ordinary pilgrimage routes to Mecca being closed last year it is faintly possible that pilgrims from Central Asia making their way from Bokhara through Afghanistan to Bombay (*sic*) chose the mountain paths instead of the ordinary roads, but there is no evidence whatever of this. A second suggestion is that pilgrims from Bokhara (which has constant communication with India) may have visited the tombs of local saints or Ishans which exist both in Anzob and Marzitch. But a much more important point brought forward by Dr. Levin is the following. He examined every surviving inhabitant of both villages. In many he found buboes in various stages of absorption or which had been opened and were in various stages of scarring. Now in several other persons *who had not been attacked in the recent epidemic* exactly similar appearances were present. These persons said that they had been ill two, four, or even 10 or 20 years previously. They described the illness as lasting from three to five days and as characterised by headache, fever, pain, and swelling in the groin; the swellings suppurated and either burst or were opened by the "wise-woman" of the village. That the swellings were not venereal in origin was proved by the fact that children of five or six years of age had had them. Neither syphilis nor scrofula was present in a single case and small-pox could be excluded. Swellings of this kind were found in 30 people in the two villages above named.

The author of the report comes to the conclusion that there exists in these *kishlaks*, or mountain villages, an endemic disease which he christens "lymphadenitis femoralis suppurativa." Might not plague, he asks, have been introduced into this remote spot 20 years ago and have remained to give rise to occasional epidemics? Epidemics of this kind might easily escape notice. For example, last year's outbreak only became known by an accident; the villagers of Margif, though only eight versts (five and a half miles) from Anzob, had heard nothing of the appalling occurrences there until a month after they began and 200 people had already died. They had run short of linen "for shrouds" (even to the last detail the story of these poor highlanders is gruesome and pitiful) and some of them went to Anzob to borrow some. It was they who reported the occurrences there to the authorities. Supposing, it is very appositely asked, that they had not run short of linen? A whole village might have died out and the world have been none the wiser.

The last suggestion which the author makes is that the recent outbreak was caused by infection from Bagdad, where, he states, plague was epidemic in 1873 and where there were many isolated cases at least as late as 1892.

I have already trespassed far upon your valuable space and must leave the facts here brought forward with but the briefest comment. Their importance is obvious. It is certain that last autumn a concentrated and virulent epidemic of plague occurred in the region described; it is possible that the disease has been endemic in certain centres there for many years past. Such centres in this region would be closely analogous to the so-called endemic centres in the Himalayas, in Gurwhal and Kumaon. They are the nearest and most probably are the actual sources whence the infection has during the past week or two been introduced into European Russia. By far the larger part of the traffic between Central Asia and European Russia passes through Astrakhan, and it is therefore not surprising that it is in the neighbourhood of that town that plague has made its appearance.

I am, Sirs, yours faithfully,

FRANK G. CLEMOW, M.D. Edin., D.P.H. Camb.

London, August 29th, 1899

[1] On August 19th it was telegraphed to the *Times* from Lorenzo Marques that many cases of an illness thought to be plague had occurred at Magude, two days' journey from that port. On August 22nd it was stated that the disease was then thought not to be plague, but the place was still isolated by a cordon of soldiers.

HOSPITAL REFORM ASSOCIATION.

To the Editors of THE LANCET.

SIRS,—Will you kindly allow me to inform the readers of THE LANCET that the Conference will take place at St. Martin's Town Hall, Charing Cross-road, on Tuesday, Oct. 10th, at 4 P.M. and 8 P.M., and on Wednesday, Oct. 11th, at 4 P.M? In response to my appeal the following gentlemen have already kindly promised to read papers: Dr. Bertram Rogers, Clifton; Dr. Brown Ritchie, Manchester; Dr. Arnold Lea, Manchester; Dr. Francis Waring, Brighton; Mr. C. S. Loch, London; Mr. Douglas Dent, Bristol; Mr. G. A. Hawkins-Ambler, Liverpool; Mr. C. W. Warren, London; and Dr. Richardson Rice, Coventry. It is also a matter of satisfaction that Mr. Timothy Holmes has promised to preside at one of the meetings.

I am, Sirs, yours faithfully,

Cardiff, August 29th, 1899. T. GARRETT HORDER.

ENTERIC FEVER IN THE ARMY IN INDIA.

To the Editors of THE LANCET.

SIRS,—If you will allow me I should like to offer a few remarks on some points on this important subject touched upon in your review of the Report of the Sanitary Commissioner with the Government of India for 1897 in THE LANCET of August 19th, more particularly as the opinion there stated, that "there must be something over and above youth and recent arrival to account for the prevalence of so specific a form of disease as that of enteric fever, unless we assume that a hot climate, fatigue, and auto-infection are capable of accounting for it," goes far to corroborate the conclusion arrived at by myself and others at least 18 years ago.

The grounds for this conclusion are set forth in the Alexander Prize Essay for 1881 and briefly put are—that the wide range of the disease irrespective of latitude and longitude, elevation above sea-level, position of station as to seaboard plains or hills, soil or surface configuration, climate as tested by heat or cold, atmospheric moisture or dryness, or season, indicated how impossible it was to find in these natural features a common factor to explain the disease incidence; and that while youth undoubtedly predisposed to the disease in India as elsewhere, yet disease was certainly no necessary or common accompaniment of youth, and while recency of arrival was a disturbing constitutional element, possibly rendering the individual extra susceptible to any adverse agency, yet the details of the cases on this point did not indicate it as important irrespective of youth with which it often coincided, while "no amount of exposure to Indian climate sufficed to give an immunity from enteric fever if circumstances concurred to render the individual susceptible to the cause." On the other hand, the clinical and pathological data of the Indian cases, the age susceptibility, the incidence of the attacks in the community as sporadic or localised outbreaks, the surroundings of the latter when elucidated, all concurred to link the Indian with the European disease and to show the necessity of a factor irrespective of nationality, climate, soil, or natural conditions to explain its world-wide existence. That factor was then spoken of as "a specific germ," now identified as bacillus typhosus.

Your reviewer notes that assuming enteric fever to be "a parasitic disease" the "bacillus must be very widely distributed in India." The long-existent and continuous presence of the disease in so many stations of the army, the frequency with which the disease is contracted in rest camps and on the line of march, fully attest this point. And besides, other races in India have certainly no natural immunity from the cause, and hence, considering the fostering influences of their environment, the important feature here is to ascertain at what age and in what form (possibly modified) they suffer from it. Though, even we exclude these other races, there is the fact of the widespread prevalence of the disease over an extensive past period in our own race to furnish a basis of lineal descent as explanatory of the present disease were it necessary.

Regarding the disease as specific and the main source of the army disease to reside in the native communities, the possibility of transfer of the bacillus through the air from excrement, through the water as such, or as prepared drinks, or as adulterated milk, or through clothes washing, through food, and by "flies from ordure to meat," was pointed out; and besides these, reference was made to three points in our own community as possibly explanatory of the origin of some disease from ourselves—the dry-earth system with removal from barracks, cases in hospital, and post-mortem examinations. In the first two instances we know well that stools are passed in the first stage of the disease before the sufferer comes under observation or before the case is diagnosed; such infectious stools go into the common receptacle and others are exposed to their influence, are carted away and buried in a shallow manner just outside the cantonment; the carts return to barracks or hospital, and the possibility of germs being atmospherically conveyed from these sources cannot be ignored. Again, in post-mortem examinations with the mass of excreta and fluids flowing from the body and disposed of in a like method, what guarantee is taken that the contained germs are rendered harmless? Here there are at least three distinct ways in which disease transfer may be effected, and the difficulty of providing against the first two is very apparent to those with Indian experience. What thoroughly effective guarantee have we for germ destruction except heat artificially applied?

In truth, the more thought is given to this subject the more difficult becomes the problem of guarding the young troops against the conditions which surround them. The bacillus being with certainty existent in India as elsewhere, given the present conditions, the certainty of disease following these essentials is apparent. The task open to action is to minimise the numbers to the utmost, and since we can do but little in regard to the native communities and cannot undo the past insanitation, the suggestive course lies in rendering the troops as immune as possible by protective inoculation or by sending *adult* men (and not youths) to India and increasing the stay in that country, while guarding the approaches of the bacillus to the human organism through water, air, and food to the utmost.

Another point mentioned in the review is that "it is quite clear that the theory of enteric fever being exclusively a water-borne disease has been pushed too far. A partial truth has been taken as if it were the whole truth." This statement the army data fully substantiate. The conclusion I came to was that air and water were about equally balanced as the media of the diffusion of the germ in military life, the frequency of operation of each medium varying with the country and its conditions and the modes of water-supply and conservancy in vogue. The presence of the disease as an epidemic probably is always associated with water carriage of the bacillus; and water acts as the medium sometimes in localised outbreaks, but the evidence in no small number of the latter endemic examples of disease prevalence and many of the sporadic cases forcibly points to aerial diffusion of the germ as an equally potent medium.—I am, Sirs, yours faithfully,

FRANCIS H. WELCH, F.R.C.S. Eng.,
Surgeon-Colonel (retired), M.S.

Brandram-road, Lee, S.E., Sept. 4th, 1899.

"THE DEVELOPMENT OF THE MOTOR CAR."

To the Editors of THE LANCET.

SIRS,—I noticed a letter and an annotation in the columns of THE LANCET under the above heading but have been too busy to write. I have been interested in motor cars for some years and have carefully watched their development here and in France since their use became legalised, and have had one for the last nine months. Your correspondent says that he did not see a single car convenient for a medical man to use. Of course, many medical men are using motor cars now, and no doubt information from drivers of the different cars would be valuable and interesting. I should feel inclined to say that of the cheaper cars the following are suited to medical work: International, Critchley Daimler, Jackson's (? sufficient horse-power), The Star, Orient Express, Decanville, and Cambier Duc and Benz (? strong enough). I have an "International Phaetonette," with hood, have used it for 4000 miles in all weathers, over all roads, mostly atrocious, and day and night, and have never had any trouble with the engine; my only worries have been chains and tyres, but since I have had Brampton's chains and Connolly's tyres these have ceased from troubling. As regards simplicity, I am not much of an engineer, but I fail to see how a spirit-engine can be much simpler than the Benz system.

I will briefly point out the advantages of a motor-car over horse traction. The initial cost is about the same. Thus:

motor-car with accessories, from £180 to £200. Two horses, harness, carriage, stable utensils, &c., about £180. The cost of upkeep, including repairs, is much less. A coach-house only is needed instead of a two-stalled stable, loft, yard, &c. There is no smell or trouble of manure. An intelligent youth instead of a coachman can attend to the motor. The motor is always ready day and night and can be driven all day and every day without "leg weariness" or "mud fever." One can always do the "legal limit" of 12 miles an hour and out in the country this can be easily exceeded if desired. To my mind there is less worry in keeping a motor than three horses and I have tried both. Of course, one must be prepared to do some dirty engineering; for instance, I have spent some happy hours lying on my back under my car in the coachhouse, but this is a detail. I have never had a "breakdown" but once, when an axle broke, but this has also happened to me in a dog-cart. I hope users of other makes of cars will give us some information, especially as regards the "Orient Express," which I rather admire. Trusting that this may be of some use to those who think of the possibility of using a motor,

I am, Sirs, yours faithfully,

August 30th, 1899. AUTOMOBILIST, M.D.

PS.—I think now if I lived near a dynamo and knew enough of the vagaries of accumulators I should feel inclined to try an electric motor, which will run 30 miles on *good* roads—here's the rub!

DIFFICULTIES UNDER THE VACCINATION ACT.

To the Editors of THE LANCET.

SIRS,—Under the heading of Schedule No. 3, paragraph No. 6, we public vaccinators have to give instruction and take means as to the protection of the vaccinated surface against extraneous infection both on the performance of the operation and on inspection. In my experience the less one interferes the better. The majority of public vaccinations are performed among the poorer class whose surroundings in many instances are not of the cleanliest. I have found that vaccination pads are not a great success. If the sleeve is carefully tucked up and the wounds are exposed to the fresh air they invariably do well, but with pads there is a liability for a restless child to rub off the scabs by reason of the irritation and heat of the pads. Might I ask if any of your readers would inform me as to the best and simplest method which would satisfy the inspector of the Local Government Board as to precautions taken?

I am, Sirs, yours faithfully,

Sept. 5th, 1899. PUBLIC VACCINATOR No. 2.

"PROFESSOR OGSTON'S ADDRESS IN SURGERY AT THE BRITISH MEDICAL ASSOCIATION."

To the Editors of THE LANCET.

SIRS,—Now that the first outburst of indignation that followed Professor Ogston's remarks on the Army Medical Service at the British Medical Association's meeting at Portsmouth has subsided it may be opportune in view of the publicity which they obtained to show how baseless are his assumptions.

To take some of them at random we find, for example, the following: 1. That army medical officers are neither skilled nor trained in surgical work to the same extent as the civil surgeon. 2. That they have not the same means of acquiring and maintaining knowledge of the work that would be required of them in time of war. 3. That the best of them are of a class inferior to the weakest who enter the Indian Medical Service. 4. That 20 per cent. of the wounds in war are wounds of the brain, thorax, and abdomen; and that there must be therefore an *enormous* field of usefulness to properly-trained antiseptic surgeons and a *fearful* waste of life if they be not there to occupy it. 5. That chaos reigned in Suakim in 1885. These are some of Professor Ogston's points. Let us endeavour to bring them to their bearings. As regards the first two Professor Ogston cannot be in a position to deny that the professional training of the army medical officer up to the time he enters the service is exactly the same as that of the civil surgeon and that the service gets a fair proportion of Fellows of the Royal College of Surgeons and graduates of universities, while as regards stagnating in the service the army medical officer has really greater facilities than the civil practitioner of maintaining and extending his knowledge by hospital work, by reading, and by study, and, strange though it may appear to the Professor of Surgery at Aberdeen, the instances of army medical officers nowadays who do not take advantage of their opportunities are few. As regards surgical practice specially, all the larger military hospitals are being now, or have already been, provided with operation rooms, constructed according to modern requirements and equipped with modern aseptic fittings, while in India and the colonies there are many cantonment hospitals, charitable dispensaries, and such like, where the army medical officer has as fine a field of acquiring operative skill as he would ever have had as a resident surgeon or even as a great operating surgeon in many hospitals at home. Woolwich Arsenal, too, with three army medical officers continually at work there, affords another field in which the service gains operative experience, so that nothing could be further from the true facts of the case than Professor Ogston's statement that "save a few connected with Netley most officers have hardly once in their lives an opportunity of carrying out any important operation on the brain, thorax, or abdomen." I could name several of my brother officers whose skill as operators I have seldom seen excelled and who, to my own knowledge, have performed as many of these operations as usually fall to the lot of the civil surgeon, although they have not served a day at Netley since they received their commissions. How many civil surgeons, too, are required to submit their knowledge to the test of examination or to take out a course of surgical operations after they have been from seven to twelve years in practice? Yet this is what all army medical officers have to do. As for material, one has only to consult the statistical tables in the Army Medical Department's reports to see that "attendance on minor ailments, trifling complaints, and the few serious diseases and injuries occurring among bodies of men in the prime of their age and health," &c, is not a true picture of the professional work of the army medical officer. Omitting officers, women, children, civilian employés, and others who form a varied field of practice, the executive officers of the Army Medical Service have an average each of from 20 to 25 hospital patients daily under treatment, the average duration of each case of illness being over three weeks. How many civil practitioners have the same experience?

The third point which I have noted is an extremely invidious comparison and no one in Professor Ogston's position would care to make it without verifying his facts. That he did not, however, do so is apparent, for during the whole period over which the examinations for entry into the services extend, a period including 78 examinations, on one occasion only did the last man on the Indian list occupy a higher position than the first man on the army medical list, and that was an occasion when there were only seven vacancies in the former and an exceptionally keen competition for them.

The fourth point leads one to conclude that Professor Ogston imagines that the 20 per cent. probable gunshot wounds of the brain, thorax, and abdomen would come into the surgeon's hands. He would have occupied the time of his audience better by pointing out how few who sustain a gunshot wound of the brain are not killed outright, how few thorax wounds require any operative treatment at all on the field, and how few laparotomies for gunshot injuries are successful unless undertaken early—a practice which not even the most skilled operator may have much opportunity of carrying out on the battlefield or near it. His *enormous* field of usefulness accordingly dwindles somewhat, and the *fearful* waste of life which the army medical officer is supposed not to be properly trained to avert is, to say the least, an unscientific exaggeration for any professor of surgery to give utterance to.

The fifth point, however, is perhaps the most curious of Professor Ogston's statements, because he himself was at Suakim in 1885 under the auspices of the National Aid Society, and the report of that society tells us exactly what he and his colleagues thought then of the work of the Army Medical Service. Then everything that he now describes as chaos was praised as perfect. He himself was "greatly impressed" with the suitability of the ambulance waggons, the judgment with which they were utilised, and the skill of the surgeons. "Excellent" and "a first-rate

system" are terms applied to the way in which the sick were conveyed in the dhoolies, and one of his colleagues, Dr. J. E. Squire, writes: "As a civilian who had exceptional opportunities for observing the medical arrangements for the force I cannot resist mentioning the admirable nature of the preparations made. I found a hospital almost in the desert arranged and provided in a manner which would have done credit to a hospital at home, while nothing in the way of medical and surgical necessities or comforts for the sick was wanting." The representatives of the National Aid Society, in fact, frankly confess that "when once on the sick list patients are well provided for and therefore much of our attention is devoted to distributing comforts amongst those who are not bad enough to be in hospital."

Professor Ogston's address teems with evidence, of which these are only examples, to show that he wrote it in ignorance himself of his subject and that he must have relied on information which he may have regarded as expert but which has misled him in a woeful manner.

I must apologise for the length of these remarks, but the injury the address has done the Royal Army Medical Corps is incalculable and it seems necessary to counteract in some way the influence of its inaccuracies.

I am, Sirs, yours faithfully,

Sept. 4th, 1899. R.A.M.C.

THE ORGANISATION OF THE PROFESSION.

(FROM OUR SPECIAL COMMISSIONER.)

THE WIGAN MEDICAL GUILD.

IT may be said, if we look back about a quarter of a century, that the members of the medical profession practising in the ancient town of Wigan had no sort of organisation for defensive, scientific, or social purposes. In the year 1874, however, the Wigan Medical Society was formed. Though this society was mainly constituted for the purpose of discussing scientific papers, still it did include ethical subjects amongst those suitable for debate. At that time when an accident occurred in a pit colliery surgeons made their own charges for attending the case, and it is generally admitted that in some instances their bills were exorbitant. There should have been a recognised fixed tariff, and then it is probable that no difficulty would have arisen. The want of system and uniformity in this respect gave the benefit societies their opportunity and soon the system of contract work spread rapidly. On the other hand, it was found that the discussion of ethical subjects before the Wigan Medical Society in its early days degenerated into personal disputes between medical men. Members of a purely scientific body could not be expected to carry out resolutions dealing with economical questions. It was felt that such discussions could not be followed by any practical action and that they tended to accentuate existing differences and rivalries. Ethical questions were therefore set aside and the meetings were devoted to the reading and discussion of scientific papers alone. The society progressed, but in the course of time scientific papers were exhausted and a dull period ensued. The town, however, was growing in importance, new blood was infused into the Wigan Medical Society, and after a while it resumed its meetings once more and became very prosperous. This society claims to have been more than usually successful in rubbing off rough corners. Formerly the members of the profession were all desperately jealous of each other; medical men often refused even to recognise each other, and the greatest hostility prevailed. It was the mission of the Wigan Medical Society to put an end to all this. If a dispute arose between medical practitioners some of the leading members of the society would intercede between them and act as arbitrators and conciliators and thus misunderstandings were removed and harmony and good fellowship were restored. Now this was most important work. It was literally the tilling—the ploughing or preparing of the ground before the seed could be sown. We have seen that in 1874 the discussion of ethical questions did more harm than good, but at that time the ground was not prepared nor was the pressure of economic forces as yet felt with sufficient acuteness. The situation had, however, completely changed in 1896 when Dr. Rees read an excellent paper before the society on the economic position of the profession in regard to contract work for benefit societies and on other kindred subjects. This paper caused much discussion and finally it was determined to call a meeting of all the medical practitioners of the district, whether they were members of the Wigan Medical Society or not, with the view of forming a union destined to deal exclusively with economic questions. The meeting was held on Dec. 10th, 1896. On this occasion a representative committee was formed, and ten of the principal medical men of the district were elected as its members, to lay the foundations of a medical union. As a result of this action it was decided that the name of the union should be "The Wigan and District Medical Guild," and that its object should be—

> To aim at the organisation of the profession in order to secure united action and the cooperation of all for the common good; to gather up and guide medical opinion in all matters affecting the profession, and to give public or private expression thereto when deemed advisable; and to foster *esprit de corps*.

A circular to this effect was printed and sent round to all the members of the profession, who were asked to join the Guild and to pay annually 2*s.* 6*d.* to cover the cost of the postage and other working expenses. Within six months the greater part of the members who now constitute the Guild had joined; indeed, the Wigan Medical Society, which had more than 70 members, came over to its ranks almost in a body. From the first the Guild met with nearly unanimous approval and it was soon necessary to draw up a set of rules for its government. According to these rules all duly registered practitioners are eligible for membership, but Rule 5 says that—

> In the event of any charge of misconduct against a member of the Guild being brought to the notice of the council by another member the member accused shall be notified of the charge and the case shall be considered by the council at a meeting to which both members [the accused and the complainant] shall have been invited and of which they shall receive at least 14 days' notice. But expulsion of the member shall take place only at the suggestion of the council and at an ordinary meeting of the Guild. For this purpose at least 12 members shall record their votes and a majority of three-fourths in favour of expulsion shall be essential. The voting shall be by ballot, of which ballot the council must give at least one week's notice to all the members of the Guild.

The Guild elects its chairman, vice-chairman, honorary treasurer, and honorary secretary, who are *ex-officio* members of the council, at the annual meeting. The business of the Guild is managed by these officers and a council of 12 members who are also elected at the annual meeting. One-fourth of the council, consisting of those who have attended the fewest meetings, are not re-elected for the space of one year unless by a special resolution an exception is made in their favour. The council must, as far as is possible, be representative of the various districts over which the Guild extends. The voting is by ballot. One-fourth of the members of the council constitute a quorum and they must meet at least once every month. In addition to the annual meeting there are two general meetings of the entire Guild and extraordinary meetings may be convoked on the requisition of six members. These rules are followed by a clause of great importance and full of promise. It is a rule which confers on the council the power to elect "associates" of the Guild. This associateship is thrown open to students of medicine of the third and subsequent years of study. They may attend all the meetings of the Guild, but they have not the right of voting and they are not called upon to pay any subscription. The utility of getting young men into line before they become members of the profession is obvious. It is the young and inexperienced medical man, who has only just become qualified and has not yet obtained a practice, who is the most likely to become the victim of a medical aid society or of an insurance company or of clubs that seek to sweat their medical officers, and consequently it is very necessary that the student should have opportunities of learning something of the economical situation and difficulties of the profession which he aspires to enter. In this respect active participation in the work of a medical union is the best of object-lessons. The Wigan Medical Guild have therefore been well advised in introducing this rule. There are also rules for the formation of branches of the Guild in outlying districts and for the holding of local meetings, but the resolutions adopted at such meetings are not binding on all the members of the Guild unless they are approved by the council. There are also provisions sanctioning affiliation with other similar unions in other parts of the kingdom.

When this Guild came into existence the subscriptions

paid by members of clubs for medical attendance had in consequence of the competition fallen so low that, in some instances, only 1*s.* 9*d.* per head per annum was paid. This question of subscriptions was the first matter taken in hand. It was determined to make a sharp line of demarcation between sick funds and accident funds, and on June 30th, 1898, at a general meeting of the Guild, the following resolutions were unanimously adopted. By "trade accidents" in the first resolution, it should be said, is meant "any injury sustained by workmen whilst following their usual occupations."

1. That no member of the Guild shall attend trade accidents in connexion with friendly society sick clubs.
2. That the minimum fee for attendance on any sick and accident clubs shall be 5*s.* per annum—i.e., 2*s.* 6*d.* for sickness and 2*s.* 6*d.* for accidents.
3. That all members pledge themselves to hold no position of medical officer to any registered friendly society or any medical or surgical club, except on the condition that three months' notice of the determination of the same be given and received, and that no member will allow his name to be submitted for election to any appointment until or unless due notice of such determination shall be given to, or by, the holder.
4. That the fees charged for examination and report in cases proceeding to arbitration under the Workmen's Compensation Act, 1897, be the same as allowed by the Treasury[1]—viz., for first reference, to include examination and written report, £2 2*s.*; for a further written statement on the same reference, £1 1*s.*; for a second or subsequent reference in the same case, £1 1*s.*; for attendance at arbitration proceedings, £3 3*s.*
5. That the minimum fee for a preliminary examination and report upon any accident under the Workmen's Compensation Act, 1897, be £1 1*s.*

At a general meeting of the Guild held on Nov. 3rd, 1898, it was unanimously resolved:—

That every member of this Guild pledges himself not to become a candidate for or accept any appointment as medical officer to any friendly society or sick or accident club where a vacancy has arisen or may arise owing to the enforcement of the resolutions 1 and 2 of June 30th, 1898.

Finally, on March 20th, 1899, a further resolution was passed declaring that—

Any medical man acting in opposition and contrary to the resolutions of the Guild shall be ostracised professionally.

Such are the principles which so far have been adopted. Nearly all the members who now belong to the Guild were enrolled within the first six months from its formation. Great unanimity prevails among the members of the profession. At present all the local medical men with but two exceptions belong to the Guild, and both these gentlemen wish to join. Even a homœopath was enrolled, though he has since been ostracised, not because he was a homœopath, but because he did not observe the rules.

Formerly nearly all of the miners in this district used to contract themselves out of the old Employers' Liability Act, but one of the conditions of this contracting out was that they should join an accident society, and most of them belonged to the Lancashire and Cheshire Permanent Relief Society—a very large organisation with some 55,000 members. It was a joint insurance, for the employers also subscribed to the funds. The subscription was 2*s.* 6*d.* a year, and this brought in some £6000 annually to the medical practitioners in the Wigan district. Now that the new Act has come into force and no contracting out is allowed the employers no longer subscribe to the accident societies. Naturally this affects deeply the financial position of these accident societies, and the members of the Wigan Medical Guild feared that the men would abandon their accident insurance and content themselves with paying only the 2*s.* 6*d.* to the sick funds of the friendly benefit societies which most of them were already in the habit of doing. Notice was therefore given that the medical officers and surgeons would continue to consider accidents a separate matter and would not serve if they were to be included in the 2*s.* 6*d.* paid for insurance against sickness. Deputations were then sent by the friendly benefit societies, joint conferences were held, noisy discussions ensued, and the meetings were closed because the arguments degenerated into abuse. Nevertheless, the various lodges or branches of the different friendly benefit societies—and there are about 100 of them—ultimately accepted the terms laid down by the Guild. Three lodges, however, held out and to this day one of them is without a medical officer. The members go to their former medical attendant and pay fees as private patients. The Methodist Free Church Club granted the terms demanded by the Guild but refused to reinstate their old medical officer who in obedience to the resolution of the Guild had resigned. It has been seen, however, that it is a rule of the Guild that no medical practitioner shall be allowed to suffer owing to the enforcement of the terms proposed by the Guild. Consequently a strike was organised against this club. It was on this occasion that the homœopath stepped in and took the post. He was consequently ostracised, but now he is stated to be repentant and desires to leave the club and to re-enter the Guild. The question as to whether this shall be allowed has not yet been decided. The third club has for its medical officer the other practitioner who does not belong to the Guild, but it seems a very feeble club and not of much importance in any way. In regard to women and children, the Guild is anxious to discourage their becoming members of clubs, for if this becomes general there would hardly be any private practice remaining, as nearly the whole of the population belong to the working classes. The latter are, however, in receipt of good wages. As the women work in the mills and the men work in the mines, when the children are old enough to work the joint income is sufficient for the adult women to pay as private patients. The children pay 2*s.* a year each to a sick fund, and if the father is also a member of a club it is urged that the wife at least should pay the usual medical fees. The question of the women and the children is a thorny subject and it has not yet been satisfactorily settled.

The Wigan Medical Society still continues and it is prospering. It has 75 members, and now that the Guild has been formed it devotes itself exclusively to scientific subjects and to the promotion of social intercourse between the members of the profession. The Wigan Medical Guild, on the other hand, deals exclusively with economical and ethical questions and it has certainly done much to elevate the tone of the profession. There are no more complaints about the shabby acts, the sharp practices, and the undercutting which used to cause so many disputes and so much antagonism between the local practitioners. In regard to the friendly benefit societies many of them are very old and powerful institutions. The Guild does not desire to quarrel with them, but appeals to their trade-union principles—for the members of these clubs are nearly all trade-unionists—and points out that it is inconsistent on their part to endeavour to sweat the members of the medical profession. The Guild is anxious to meet the clubs on all reasonable points, but it urges that the medical officers should be paid sufficient to ensure that the members of the clubs shall receive proper and skilled attendance when they are ill. Contract practice is unsatisfactory to the patient and demoralising to the medical attendant, for the members of clubs do not get the same attendance as do private patients. If such contract work cannot be abolished altogether it should be paid for at something more like a reasonable rate and it should be accompanied by a certain amount of private practice. As matters now stand the Wigan Medical Guild has settled all minor questions and it has overcome all the little details and smaller difficulties that beset such organisations when they first come into existence. Some of its members are now looking anxiously farther afield. It is all very well, they urge, to have organised the members of the profession in the Wigan district, but what are medical men doing elsewhere? The Wigan Medical Guild are anxious to meet and communicate with the organisations of other towns and districts, and they look forward to a national federation of all similar societies.

[1] THE LANCET, April 23rd, 1898, p. 1132.

NOTES ON SOME CASES OF LIGHTNING-STROKE.

(FROM A CORRESPONDENT.)

A FEW notes on the cases of lightning-stroke which occurred recently amongst the men of the 2nd Cheshire Regiment may be of interest to your readers and I therefore propose to give the essential details as briefly as possible.

The regiment was on the march when the thunderstorm came on, but when it became severe and apparently dangerously near the men were halted and drawn up in line with their rifles on the ground a few paces in front. Those attacked did not receive their injuries simultaneously or in a group but at irregular intervals and in different parts of the line. Why they were not killed outright, judging

from the severity of the storm, it is difficult to understand, unless, perhaps, on the theory that owing to the presence of such a number of rifles which acted as conductors, the electricity was subdivided into currents of varying strength. All those attacked were suddenly knocked down and presented the usual symptoms of severe shock with tendency to collapse, their faces were pale and drawn, they had a dazed expression, and in some cases there was actual insensibility. Respiration was slow, shallow, and in two cases irregular and almost approaching the Cheyne-Stokes type. The extremities were cold and nausea and in some cases vomiting, pains in the legs, and a feeling of numbness were present. As these symptoms passed off the men became very drowsy and complained of vague pains in various parts of the body, a general sense of fatigue, and apparent incapacity of prolonged mental effort. A few of the men presented special symptoms: one (a sergeant) was only semi-conscious and had complete paralysis of motion and loss of sensation in both legs, together with frequent attacks of convulsions of a tonic character in the trunk and upper extremities. The convulsions gradually subsided and after 12 hours he regained power in his right leg, but paralysis of a spastic type persisted in his left, unaccompanied, however, by any loss of sensation. Another (a lance corporal) was quite unconscious with loss of the conjunctival reflex and shallow irregular breathing, and it seemed for some time as if he were about to succumb. The breathing, however, gradually became more regular, the heart's action recovered somewhat, and after 12 hours he became partly conscious, although he quickly relapsed into his former state. It was quite 24 hours before he became completely conscious. A third man (a private) had absolute loss of sight which lasted for four hours and was accompanied by partial ptosis in the left eye. Many of the men were deprived of sight for a short time and to test their sight a few men struck matches in the darkness of the night. At the end of a week the majority had practically quite recovered and the subjects of the cases mentioned above showed steady although slower progress towards recovery. The paralysis in the first of the cases still persisted, but the patient was otherwise much improved. At present he is gaining power in his leg and there is every reason to hope that in a few weeks more the unpleasant symptoms will have completely disappeared.

The treatment at first consisted of the administration of extract of meat and brandy with diffusible stimulants, friction to the extremities, and in two cases artificial respiration. Afterwards complete rest and quiet in darkened wards with light, nutritious diet were enjoined and later gentle massage was exercised and acid tonics and strychnia were given. Galvanism has not been used so far, but it may perhaps have to be applied later in the first of the three cases recorded.

THE "MALARIA" EXPEDITION TO THE WEST COAST OF AFRICA.

(FROM A CORRESPONDENT.)

THE expedition consisting of Major Ross, I.M.S., Dr. Annett of the Liverpool School of Tropical Diseases, and Mr. Austen of the British Museum arrived at Sierra Leone on August 10th and were entertained until they were settled in suitable quarters by the Acting Governor of the Colony. An exceptional rainy season is being experienced—the amount of rainfall for July and the first fortnight of August being only a few inches above half the average amount of the fall for the corresponding periods of the last 13 years, 19·7 as against 33·8 inches. On the 12th news of an outbreak of fever among the patients at the Lunatic Asylum at Kissy, a small village about four miles from Freetown, was received, and there a number of mosquitoes of the genus Anopheles were captured. Most of them proved to have recently fed and one out of the 15 dissected was found to be infected. This was a small species of Anopheles not yet identified. Two mosquitoes of a larger form of Anopheles were also found. There are numerous cases of fever among the men of the 1st West India Regiment stationed at Tower-hill. Most of the cases are severe and up to the present only the æstivo-autumnal parasite has been found in specimens of their blood. The corpuscles in which the small parasites were found were strikingly numerous. Quinine is freely administered and after two days' treatment parasites are only found with difficulty. Some 50 patients convalescent for various periods have been examined, but in no case has a single crescent been seen. This is extremely remarkable and has delayed the progress of the work, no material on which to feed mosquitoes being forthcoming. The barracks of these men have been carefully searched for mosquitoes, but only a few belonging to the genus Culex have been found.

Several establishments in the town, as well as the Colonial, Princess Christian, and European hospitals, have also been carefully examined but without success. Soldier Town, where the married soldiers live and which is much visited also by men living in barracks, has also been partially inspected without success. Several species of Culex have been discovered, some apparently as yet undetermined.

A visit to the barracks of the 3rd West India Regiment, stationed at Wilberforce—about four miles from Freetown and in a district only partially cleared of bush—led to very interesting results. There were several cases of fever, including æstivo-autumnal, tertian, and quartan varieties, but again no crescents were found. The æstivo-autumnal infections were again very severe. Here, further, Culex was very rare inside the huts, but Anopheles, the small species, similar to that found at Kissy, was very numerous. Several were captured and found to be gorged with blood and five mosquitoes previously caught at Kissy were allowed to feed on quartan patients. Two days afterwards they were dissected. Among several of those caught at Wilberforce one was found infected by quartan parasites, whilst of those from Kissy fed on patients at Wilberforce the first which was dissected showed parasites corresponding in size to a two day-old infection. Two others were unfortunately spoiled in dissection, the remaining ones being still untouched. This, therefore, incriminates one species and that the most abundant of Anopheles found here. A search at Kissy for the breeding place of the Anopheles proved quite unsuccessful. A severe rainfall during the greater part of the previous day and night had probably destroyed all chance of finding them.

Breeding places of the Culex—of which Culex tæniatus and a species allied to Culex pipiens have been identified—have been easily discovered. Every tub, pot, and can of water outside the houses contains swarms of larvæ, exactly as Major Ross described as occurring in India. The breeding places of Anopheles would appear to be very few and isolated and therefore probably easy to exterminate when found. The work of the expedition will now be directed to finding these places.

It is very interesting to relate a find by Mr. Austen at Kissy. A species of Tsetse fly, distinct from the well-known South African form (Glossina morsitans), was discovered basking on the sides of boats on the sea-coast. Four specimens were with difficulty caught and found to belong to the dark West African type obtained by Mr. W. H. Crosse at Asaba on the Niger. In connexion with this it may be reported that it has been found impossible to keep horses here, that mules gradually emaciate if kept here for any length of time, and a wasting disease of cattle is also well known. The investigations of the expedition will be directed to ascertaining the nature of this disease.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

An Improved Plague Prophylactic Fluid.—The Weekly Returns.

IT is reported that a modified form of Haffkine's plague prophylactic has been produced which does not give rise to the illness and suffering accompanying inoculation hitherto. Experiments are still being conducted and it is perhaps premature to say that they have been successful. It has up to the present been believed that a good reaction (i.e., fever, pain, &c.) is necessary to ensure full protection. The illness though temporary caused by plague inoculation is no doubt a very serious drawback to it.

The weekly returns of plague are getting worse and worse—3684 deaths this week against 2687 in the previous seven days. Poona city returns the appalling mortality of 1103 deaths—a rate of over 400 per 1000 per annum. There has been an increase in Bombay city, in the Kholapur State,

and in the Belgaum and Nasik districts. In other parts of India outside the Bombay Presidency there were only 215 deaths. There has been an increased number reported from Calcutta.

August 10th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Iron and Steel Institute at Manchester.

MANCHESTER has just been honoured by being the scene of the autumn meeting of the Iron and Steel Institute, under the presidency of Sir W. C. Roberts-Austen, K.C.B., D.C.L., F.R.S., the chemist and assayer to the Royal Mint, and Professor at the Royal School of Mines. Learned papers, theoretical and practical, have been read, social functions have pleasantly mitigated scientific severity, excursions have been made, and indeed—*mutatis mutandis*—there has been exhibited a fairly close reflex of the British Medical Association gatherings. On one of the afternoons the members and a number of ladies were conveyed in steamers down the Ship Canal as far as the Barton Aqueduct. Although the commercial and engineering aspects of the canal are, and were doubtless felt to be, deeply interesting, still in this typical summer weather the stirring up of the black depths of the canal by screw or paddle would release smells of such engrossing fascination that all the marvels of applied science would in comparison fade into insignificance. No doubt some of the chemically and metallurgically trained noses would bear the odours with philosophical calm, but one feels sincere pity for the ladies. I have known them turn pale and greenish and almost sick at a good distance from the canal, and one who has not known it personally can scarcely conceive of a smell so horrible as that given off by it in the broiling summer heat. The condition of the canal should certainly justify the strongest measures against pollution from the most distant points of the watershed to the outlet of the Manchester and Salford effluents. The Joint Mersey and Irwell Committee have to get through a difficult task before they can say that their work is done.

Manchester Infirmary Site.

A special meeting of the Manchester City Council was held on August 23rd to approve or disapprove of the proceedings of the special committee *re* the Royal Infirmary. After much discussion the matter was referred back to the committee, objection being taken to the reservation of 3000 yards of the site for an out-patient department. Since the meeting of the council letters from several influential friends of the infirmary reveal great differences of opinion and old views and ideas are industriously reproduced.

Manchester Water-supply.

The long-continued dry weather has told even on Thirlmere, though there has been no serious cause for alarm as to the water-supply. The week before last it was calculated that the reservoirs held sufficient for 61 days, and since then we have had rain and a lower temperature which has reduced the demand for water. The consumption during the week averaged 37,500,000 gallons per day, the highest on record for any week in the history of the city, and on Friday, August 25th, the highest record for any one day was reached, the consumption being 41,250,000 gallons. On Monday, the 28th, it fell to 35,750,000 gallons, showing how it decreased when the heat became less excessive. On August 30th the surface of Thirlmere was 4 ft. 3 in. below the overflow sill. By now probably its normal height has been approached, but the rains have been fitful, not continuous.

Summer Diarrhœa in Manchester.

As was to be expected the recent hot weather has levied a heavy toll on infant life. Dr. Niven reports that during the last nine weeks 507 deaths from diarrhœa and English cholera have been registered in Manchester, 404 of them occurring in children under 12 months old. The week before last 132 were attributed to diarrhœal diseases, 104 of them among infants in their first year of life. The temperature of the soil at four feet from the surface has not been below 56° F. for some time. The same prevalence of infantile diarrhœa exists through the district. Mr. A. W. Martin of Gorton reports that during the month 21 deaths took place from this cause, and 20 of them occurred in children under 12 months old.

Chorlton Union: Accommodation for Imbeciles.

At the meeting of the Chorlton Union Board on Sept. 1st the chairman, Dr. J. M. Rhodes, stated that the proportion of paupers in that union was 1 in 52 persons, the average for Lancashire being 1 in 53 while that for England and Wales was 1 in 39. He thought the figures showed that there was a large amount of thrift and that the people in the district were improving in social position, but those relating to lunacy were a matter for regret. In the Lancashire workhouses they had only an increase of 220, but the number in the asylums had risen from 7930 to 8561. The Chorlton Board provide for their own harmless imbeciles and epileptics and there are 306 in their own workhouse. He was sorry that some unions did not make similar provision, for it was unjust to such unions as Chorlton, Blackburn, Prestwich, Manchester, and Salford, and though they had been asking for justice on this question for many years "the Local Government Board turned a deaf ear to all they had to say." One of the guardians said that the question of providing temporary accommodation for lunatics should be constantly impressed on the Lancashire Asylums Board. Dr. Rhodes stated that the increase of insanity was such that according to some of the best authorities they ought to be building a new asylum every year.

Lancashire Asylums Board.

At the quarterly meeting of the Lancashire Asylums Board held on August 24th letters were read from the guardians of the Prestwich, Rochdale, Stockport, and Chorlton Unions complaining of the lack of accommodation in the asylums of the Board. The chairman, the Rev. C. T. Royds, said that the letters pointed to the fact that before long they would have to look out for a site for a sixth asylum. It seems that the Winwick Asylum will not be finished for 18 months or so and, as one of the members said, "lunacy had increased so greatly of late years that it would be filled at once." The provision made for epileptics and harmless cases differs much in different unions. Blackburn deserves commendation, for with 906 inmates in the workhouse provision has been made for 187 of these cases. The Bolton guardians "were perhaps the worst offenders in this respect, for with 1156 inmates in their workhouse they provided for 18."

Sept. 5th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Mason University College.

ALREADY there are signs of activity in respect to the approaching session. The announcement is made that the opening address in the Queen's Faculty of Medicine will be given by Sir William Gairdner on Oct. 2nd. From the reputation of this distinguished professor it is expected that the attraction will ensure a large and representative gathering of the medical practitioners of the district. Introductory lectures are also advertised by the two new professors on taking possession of their respective chairs—on Oct. 9th by Dr. R. F. C. Leith, Professor of Pathology and Bacteriology, and on Oct. 10th by Dr. E. W. Wace Carlier, Professor of Physiology. "The Advance of Bacteriological Science in the Diagnosis and Prevention of Disease" and "Secretion, a Chapter in Cell Physiology," cannot fail to be interesting subjects when treated by experts of the known ability of the two professors recently appointed to the staff of the College.

The Sewage Farm.

Complaints loud and deep have recently been made about the abominable effluvium arising from the sewage farm; in certain districts it is said to be almost intolerable and it is alleged that deaths of children from diphtheria have been distinctly traced to this source. The report of the medical officer of health, Dr. Bostock Hill, tends to confirm in a great measure the justice of the grievance. The report concludes: "It is the unanimous opinion of the Health Committee who have personal knowledge of the nuisance that the Drainage Board should be strongly urged to at once remove what is undoubtedly a public danger and they accordingly recommend that the council do take such

steps as may be necessary to obtain an abatement of the nuisance." This is no doubt a plausible expression of opinion, but the difficulty of how it is to be carried out is a great and a genuine one. The evil is of long standing and has engaged the discussion of various litigants for a number of years. The Drainage Board have recently acquired at a great expense an additional quantity of land and it is possible that the conduct of operations upon it may relieve the present trouble. The land which has been worked upon hitherto is saturated and waterlogged—the long spell of hot weather with the concretion of lime which has been used as a dressing has rendered it inoperative for practical purposes—hence the aggravation of the foul smell and its diffusion through the air of the surrounding district. Apart from the disagreeable odours the proof of material risk to life and health is an undoubted reason for some speedy and effectual mitigation of the nuisance by the aid of scientific knowledge in dealing with this large area of sewage matter.

Black Country Water-supply.

The large district known as the Black Country, comprising a vast population devoted chiefly to mining and iron industries, has lately suffered from the want of a free supply of water. On August 30th a conference was held at Dudley, under the chairmanship of the mayor, to consider the question of the water-supply of the area alluded to. Various local authorities were represented and considerable discussion took place as to the best methods of obtaining an efficient supply, several local medical men giving testimony of the inadequacy of the present supply in respect to quantity and quality. Ultimately it was resolved that in the opinion of that conference it was desirable that the whole of the authorities represented and such other authorities as they could get to join them should take united action with the view of obtaining an improvement of the present condition of the water-supply.

Sept. 5th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Precautions against the Importation of Plague into the Port of Liverpool.

A CIRCULAR letter from the medical officer of health of the City and Port of Liverpool (Dr. E. W. Hope) has been issued to the members of the medical profession bearing on the plague which is now prevailing in Portuguese ports. The trade carried on between Liverpool and Portugal is a very considerable one and at the present time vessels on arrival from Portuguese ports are submitted to a careful inspection. The letter lays stress on the possibilities of sailors landing whilst in an incubative stage of the malady, as the voyage from Oporto to Liverpool is usually accomplished in four days, whereas the incubative period of plague has been estimated by the Venice Convention to vary from five to ten days. Special attention should be directed to seafaring persons coming under notice in early stages of illness. Every precaution is now being taken by the officials of the health department to retain under observation sailors arriving from Portuguese ports. Their names and addresses are taken and the persons themselves are visited by members of the staff of the medical officer of health.

The Proposed Joint Parochial Hospital for Tuberculosis.

A further hitch has arisen in connexion with the erection of the joint parochial hospital for the treatment of tuberculosis. The whole subject appears to bristle with difficulties. From the reports of the proceedings of recent meetings of the West Derby and Toxteth Boards of Guardians it would appear that it was the desire of the select vestry and of the West Derby Board of Guardians that the erection of the proposed hospital should be undertaken by the Toxteth Board of Guardians, the latter body being quite willing to proceed with the work. It appears that the select vestry do not now agree to this conditional proposal, consequently the scheme under which the Toxteth guardians were to build the hospital has fallen through. The next step in the matter would be the appointment of a joint hospital committee of 12 persons, four from each union, a proposal which now awaits the sanction of the Local Government Board. The hospital is computed to cost £10,000, towards which amount the Toxteth Board of Guardians, as representing the smallest union, will contribute a proportion of one-fifth. So far as the select vestry are concerned an important minority do not favour the erection of the hospital at all. They consider the whole subject of the treatment of tuberculosis to be in an experimental stage. They argue that under present circumstances it would be more logical to send their pauper patients to the building which is in course of erection at Delamere Forest by the Liverpool Hospital for Consumption, from which they could be withdrawn in the event of failure of treatment, while in the event of success the select vestry might continue to send their patients to that institution or might build a sanatorium on their own account. With this point in view Mr. James Lowry has given notice that at a future meeting of the select vestry he will move:—

That the resolution of the select vestry of the 11th day of July last having reference to the provision of a hospital for the accommodation of tuberculosis patients belonging to the three Poor-law districts be rescinded and that a copy of this resolution be forwarded to the Local Government Board with a request that the preparation of the proposed Order be not further proceeded with.

The Discovery of the Malarial Mosquito by Major Ronald Ross, I.M.S.

Two members of the commission despatched by the joint committee appointed by the Colonial Office and the Royal Society are now on their way home from the east side of the continent of Africa where their investigations have proved abortive. It is believed that they will be intercepted on their way home by instructions to proceed to the headquarters of Major Ross on the other side of the continent to assist him in the researches in which he is engaged. Major Ross intends to send home at an early date specimens of the mosquito which he regards as the cause of the ravages of malaria. As you have already announced the authorities of the Liverpool School of Tropical Diseases have decided to send out Dr. Fielding-Ould to Sierra Leone to assist in the investigation of the discovery of the malarial mosquito. Dr. Fielding-Ould is an alumnus of University College, Liverpool. He is an Oxford graduate in arts and medicine and has recently devoted himself to research work under the tutelage of Professor Boyce.

Sept. 4th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

University of Glasgow.

IN connexion with the resignation of Lord Kelvin the University Court have recorded the following minute, a copy of which has been sent to his Lordship:—

The Court have received with the deepest regret Lord Kelvin's petition for leave to resign the chair of Natural Philosophy. In granting that petition, as they feel it their painful duty to do, the Court desire to record the sorrow with which they anticipate the close of a service that for more than half a century the University has seen growing in influence and usefulness, and in beneficent application of the inventions of science to the wants of life, to the lightening of labour, to the comfort of the dwelling, to the safety of the traveller by land and sea, to the promotion of the facilities of commerce, and the means of human intercourse.

They recall with pride the renown which Lord Kelvin's scientific triumphs have reflected on the University of which he has so long been the illustrious ornament. They grieve to think that the circle of colleagues and fellow-workers, to whom he has been endeared by the kindness of his heart, the uprightness of his character, and the honourable simplicity of his life, must lose the immediate offices of a friendship so highly prized as his. And they beg him to carry with him into his retirement from academic life the assurance of their warm personal regard, of their sincere respect for the fidelity with which he has discharged his duty to the University, of their gratitude for the lustre which his achievements have shed upon it, and of their hope that the evening of his days may, under the blessing of God, be prolonged and peaceful.

Signed by the Principal and individual members of the University Court.

In acknowledging the minute Lord Kelvin expresses the hope of retaining a permanent connexion with the University in an appointment as Research Fellow "for which," he states, "I have made application to the Senate." The new order of Research Fellows is certainly to be congratulated on the acquisition of so distinguished a recruit.—It is announced that the advanced classes in bacteriology and pathological histology, which were inaugurated by the late Professor Coats, are this year to be somewhat extended. Each class is to commence on Oct. 2nd and to meet thrice weekly for a period of eight weeks. The joint fee for the two courses is fixed at five guineas, and the classes are open to graduates and senior students.—In more than one quarter regret is

often expressed that an endeavour is not made on a more serious scale to encourage post-graduation study in the Glasgow school. The clinical and laboratory opportunities are of the best, and it only needs a well-organised and sustained effort to secure a decided success.

Glasgow Corporation.

There seems no limit to the responsibility which some of the civic fathers are prepared to assume. At the last meeting of the Glasgow Corporation one of the councillors moved for the appointment of a committee to consider the advisability of establishing a municipal crematorium. On the same occasion a medical councillor proposed that an inquiry should be made with a view to secure the foundation in the city of one or more centres for the supply of pure milk. As each resolution was successfully opposed by "the previous question" it would appear that the majority consider that, at least for the present, such proposals are beyond the legitimate limits of municipal enterprise.

Sept. 5th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Death of Lieutenant-Colonel J. J. Greene, R.A.M.C.

THE attendance at the funeral of Lieutenant-Colonel Greene, which took place at Glasnevin on August 21st, was large and representative. The remains were followed to the grave by a company of the Royal Army Medical Corps, under the command of Lieutenant Barrow, many other officers being also present. Lieutenant-Colonel Greene, who was a graduate of the University of Dublin, retired from the Army Medical Service in March last. For some time before his retirement he had charge of the Royal Military Hospital at Arbour Hill.

Medical Appointments in West Africa.

The following announcement appeared in the *Irish Times* of August 29th over the signature of the Rev. J. P. Mahaffy, F.T.C.D.:—

SIR,—I wish to notify to our younger graduates in medicine that I have received from the Colonial Office a minute relating to medical appointments in West Africa, which I have placed in Mr. Miller's office for their perusal. In the midst of the Long Vacation there seems no other way of bringing the matter to their notice, and if we delayed till after the vacation we might be told that our applications were late.
Trinity College, Dublin, August 28th.

Death of Professor Cuming.

By the lamented death of Professor Cuming considerable changes will take place in the Belfast School of Medicine. He was Professor of Theory and Practice of Medicine at Queen's College and for this chair, which is a Crown appointment, Dr. J. A. Lindsay, physician to the Royal Hospital, who acted as locum-tenent for Professor Cuming during a part of last session, is a candidate. Dr. William Calwell will be made full physician at the Royal Hospital in Professor Cuming's place (for the past 18 months he has had charge of the late professor's wards), and for the post of assistant physician, vacated by Dr. Calwell, Dr. H. McKisack, who has for the past two years been medical registrar, is applying. It is believed that he will not have any opposition.

Stimulants in the Belfast Workhouse.

A medical report presented to the Belfast Guardians as to the quantity of stimulants distributed to patients in the infirmary for the three years ended March 25th, 1899, brings out the following facts. For the year ended March 25th, 1897, there was a daily average of patients in the infirmary of 1431, and by these 74,126 ounces of whisky and 70,556 ounces of wine were consumed at a total cost of £575 13*s.* 10*d.*, the average cost being 8*s.*; for the year ended March 25th, 1898, the average daily number of patients in the infirmary was 1532, and 110,867 ounces of whisky and 31,262 ounces of wine were consumed, the total cost being £781 15*s.* and the average cost 10*s.* 2*d.*; for the year ended March 25th, 1899, the average daily number of patients in the infirmary was 2000, and 158,417 ounces of whisky and 111,906 ounces of wine were consumed at a total cost of £1077 17*s.* 2*d.* and at an average cost of 10*s.* 9*d.*

Proposed Water Scheme for Portadown.

The engineers for the proposed scheme to supply Portadown by taking the water from the River Bann estimate the probable cost at £15,000 and they agree to do the whole engineering work for £500 if the local authorities will agree that in the event of the total cost not exceeding £15,000 by more than 5 per cent. thereof they shall be entitled to receive an additional sum of £100, making in such a case a total of £600. This proposal was agreed to by the town council, the sum to cover all past expenditure. There is no doubt that many of the inhabitants of Portadown do not like the idea of taking the water-supply from a river, fearing local and surface pollution.

Bangor Cottage Hospital and Home.

From the report for the year ending July 31st, 1899, it appears that 68 patients have passed through the hospital, most of them being convalescents from Belfast coming to recruit at this home, so conveniently situated on the border of Belfast Lough. There are at present in the hospital five men from the Channel Fleet which during July and August was in Belfast Lough. The income for the year was £247 and there is a balance in hand.

The Muzzling Order for Dogs in Ireland.

The muzzling order in force in Ireland since 1897 has been relaxed in certain districts by a very recent decision of Council. There is some reason to think that this measure is premature. At Finglas, in the neighbourhood of Dublin, two children were savagely attacked last week by five terriers and injured so severely that one of them still remains under treatment at the Mater Misericordiæ Hospital. Some three weeks ago a woman was bitten by a dog at Baltinglas She has just returned after a course of treatment of 18 days at the Pasteur Institute in Paris. In this case there is strong evidence that the dog was suffering from rabies. It was at once destroyed and its brain, &c., were sent to Professor Sullivan of Trinity College for examination. The pathological report stated that the brain presented the usual appearances found in rabies—congestion of the vessels of the pia mater, &c. Moreover, rabbits inoculated with portions of the medulla showed early symptoms of the paralytic variety of the disease. There is another patient at present under treatment at the Pasteur Institute, a gentleman from Dublin.

Sept. 5th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Dr. Doyen and Maître Labori.

DR. DOYEN, a celebrated Paris surgeon, has had an unpleasant experience arising out of the murderous attack made at Rennes on Maître Labori, one of the counsel for Dreyfus. Immediately after receiving his wound Maître Labori was attended by four medical men who were present at the trial—namely, Surgeon-Major Renaut, Dr. Paul Reclus, Professor Brissaud, and Dr. Widal, the two latter being Paris hospital surgeons. Examination of the patient showed that there were no alarming symptoms and no fever, whereupon all four decided not to interfere surgically but to leave the bullet undisturbed in the tissues, where it appeared to cause no irritation. It was then announced in the newspapers that Dr. Doyen was going to Rennes at the request of Maître Labori's family, the real fact being, as Dr. Doyen afterwards explained, that he went of his own accord to ascertain the condition of the patient who had been a schoolfellow of his, and as he did not know what surgical treatment would be adopted he took his instruments with him so as to be prepared for any emergency. He was disappointed at finding on his arrival in Rennes that he could not see Maître Labori, who was not allowed to receive visitors, so he sent a message to Dr. Reclus expressing a wish to be present at the next consultation between the medical men, but he did not get any reply. Having succeeded in meeting Dr. Reclus he asked that he might be allowed to be present when the dressings were changed, but Dr. Reclus refused permission. In spite of further persevering attempts Dr. Doyen was not able to see the patient and accordingly returned to Paris, where he was interviewed by a journalist from whom he did not conceal his indignation at being kept at arm's length through manifest personal hostility, neither did he disguise his uneasiness on finding that his friend Maître Labori was in the hands of one of the last representatives of the old school of expectant surgery. He added that the bullet, as localised by the Roentgen rays,

was very easy to extract and that he was not without misgivings as to the consequences of its continuance in the tissues. This interview being published in the newspapers Maître Labori wrote a letter declaring that he had complete confidence in Dr. Reclus and that he greatly regretted the attacks made on him by Dr. Doyen, who was an old personal friend and was evidently carried away by the warmth of his kindly feelings.

Precautions against the Plague.

On account of the epidemic which just now prevails in Oporto and probably in a great part of Portugal the French Government has decided to require a clean bill of health from vessels arriving at Marseilles from Portuguese and Spanish ports, and in default of a clean bill of health quarantine will be imposed. The weekly service of French steamers between Carthagena and Oran has been temporarily stopped. A scientific commission, headed by Dr. Roux and including Dr. Calmette, director of the Bacteriological Institute at Lille, has gone to Oporto. Moreover, the Pasteur Institute in Paris has just been authorised by special decree to manufacture anti-plague serum, with permission to distribute the serum and to sell it as circumstances may require. No suspicious case has been observed either in Paris or in France and the alarming statements made with regard to this by a Danish newspaper are entirely false.

Decline of Typhoid Fever in Paris.

During the month of July typhoid fever showed a slight increase beyond its average prevalence at this time of year, but it is now evidently declining. The number of notified cases, which were 213 during the thirtieth week of the year, were 232 during the thirty-first week, 174 during the thirty-second, and only 155 last week (the thirty-third week of the year). The general average of deaths from all causes is 978 per week, the number last week being 926, and the ordinary weekly average in August being 876. The week of highest mortality was that from July 30th to August 5th, when the number of deaths was 1114.

Water-supply and Sewage Disposal in Paris.

The first analysis of the water supplied from the new filtering reservoirs at Ivry has just been made and has given an average of 268 bacteria per cubic centimetre, whereas the average for the best spring-water used for drinking purposes in Paris is normally from 1200 to 1500 bacteria per cubic centimetre. These figures are extremely low when it is borne in mind that the Seine water, a certain amount of which had to be supplied during extremely hot weather up to the present year, contains 50,000 bacteria per cubic centimetre.—As I have already said,[1] the emptying of the sewers into the Seine has completely come to an end, and since July 8th last the whole of the sewage has been disposed of by irrigation. With reference to this purification of the Seine a strange disclosure was made at the last meeting of the General Council of the Department of Seine-et-Oise. At Clichy there is a pond into which the main sewer first empties itself; bulky matter here falls to the bottom and the sewage is raised by pumps in order to be led to the irrigation grounds. At the meeting of the council above mentioned one of the members (M. Duverdy) stated that the pond in question is provided with an overflow for the escape of the surplus water when more comes through the sewers than the pumps can deal with—as, for instance, after heavy rain. One side of this pond, 60 metres (65 yards) in length, is in the form of a weir for the escape of the water when it rises sufficiently high, and the water thus escaping flows into the Seine. M. Duverdy has tried to arrive at the probable quantity of water discharged by this channel, the existence of which the engineers had not made known to the public. Taking first the data adopted by the city of Paris, which assumes the land necessary for irrigation as 5000 hectares (12,500 acres), and secondly the lowest figure allowed by law of 40,000 cubic metres of liquid per hectare per year, the total discharge of the sewers works out at 550,000 cubic metres per day. If from this total is deducted the number of cubic metres actually discharged on the land at Gennevilliers, Achères, and Pierrelaye, which is given officially for July, 1899, as 417,000 cubic metres daily, there remains a formidable difference of 133,000 cubic metres which pass every 24 hours through the above-mentioned channel into the Seine. Evidently this estimate is only an approximation, but it shows that something still remains to be done in order that the city of Paris may be in a position to declare that not a drop of sewage pollutes the Seine.

[1] THE LANCET, July 15th, 1899, p. 186.

Baby Shows.

In the next session of the Municipal Council attention will be given to baby shows and prize competitions for infants. Reports recently prepared by hygienic commissions go to prove that these competitions are attended by many dangers. Dr. Dufournier and Dr. Vallin have informed the council that in order to enable the infants to win medals the nurses feed them in a manner which is not conducive to their health. The infants, in fact, are greatly overfed and at a later stage after their undue plumpness they suffer from serious disorders of digestion. The two medical men above named are in favour of prohibiting these baby shows which too closely resemble exhibitions of fat animals.

Sept. 5th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Formalin in Tuberculosis.

DR. HAHN of Mainz, writing in the *Centralblatt für Chirurgie*, recommends injections of formalin in tuberculosis of the joints, in empyema of the pleura, and in tuberculous abscesses. The treatment consists in withdrawing the pus by aspiration with a syringe and then injecting a solution of boracic acid, which is afterwards removed by a second aspiration. A quantity of 1 per cent. formalin-glycerine is then injected and in the case of a joint the limb is put on a splint. After the operation fever generally sets in, the fluid in the abscess increases considerably, and severe pain is felt. These symptoms subside after a few days and in a fortnight the exudation is as a rule absorbed. A second or even a third injection of formalin may have to be given, although absorption often occurs after the first injection. Recovery takes place in a short time and the joint becomes almost as useful as ever. Dr. Hahn says that formalin is much more efficacious than iodoform-glycerine.

Suture of a Wound of the Heart.

Dr. Pagenstecher of Elberfeld reports in the *Deutsche Medicinische Wochenschrift* a case of successful suturing of a wound of the heart. The patient was a youth, 17 years of age, who had been stabbed in the left side of the chest. He very soon lost consciousness and did not regain it until two hours later, after being taken to the hospital. There was a small wound in the fourth intercostal space with very little external bleeding. Pulse and respiration were scarcely perceptible, the heart sounds were rhythmical but very faint, and the corneal reflex was absent. Next morning the patient's state was worse, the dulness on the left side extended as far as the posterior axillary line, and a good deal of dark blood was discharged through the wound. As there was a likelihood of death from internal hæmorrhage Dr. Pagenstecher decided on an operation, which was accordingly performed on July 13th, about 16 hours after the injury. On a piece of the fifth rib being removed a wound of the pericardium two centimetres in length (0·8 inch) came into view and was enlarged to five centimetres (two inches). The wound of the heart muscle was in the lateral wall of the left ventricle, being about three and a half centimetres (1·4 inches) in length and discharging a slight but continuous stream of blood. The pericardium contained no blood to speak of. The wound in the heart was closed by four celluloid sutures (celluloidzwirn), three being deep and one superficial, the ends of which were left very long in order to be carried through the external wound. The operation had no influence on the action of the heart and when the sutures were tied the hæmorrhage ceased at once. An incision into the pleura was then made to remove the blood which had collected there; an enormous mass of dark fluid blood immediately ran through the opening, so that the wound and its surroundings were at once covered by it. During the effort of coughing the lung appeared in the wound until the pleural cavity was plugged with sterile gauze. The pericardial wound was then closed with catgut. Recovery was uneventful. On July 20th the pulse was 90. On July 22nd two of the heart sutures were removed by traction and on August 2nd the two others. On Sept. 12th there was still retraction of the lung with cardiac dulness

extending to the left over the line of the mammilla. The Roentgen rays showed that there was no dilatation of the heart. On Sept. 20th the lad was discharged with a small fistula. On Nov. 15th the thorax was quite normal and the patient is now in perfect health. Up to the present time ten cases of suture of the heart have been recorded, seven of the injuries being stabs, two being gunshot wounds, and one being the penetration of a needle into the heart. Six patients recovered and four died after the operation. According to Fischer's statistics the death-rate of wounds of the heart without operation is 90 per cent., while recent statistics by Brentano make it to be 80 per cent. The heart is obviously able to bear somewhat long and complicated operations without serious embarrassment of its action.

The Congress of Naturalists and Medical Men.

The Congress of the Association of German Naturalists and Medical Men will be held this year in Munich from Sept. 17th to 23rd. In the general meetings papers will be read by Professor von Bergmann of Berlin on the Value of Radiography in Surgical Diagnosis; by Professor Birch-Hirschfeld of Leipzig on Science and Medical Treatment; by Professor Klemperer of Berlin on Justus von Liebig's Influence on Medicine; and by Dr. Fridtjof Nansen on the Results of his Expedition to the North Pole. Medical men and others who without being ordinary members of the association desire to take part in the proceedings may apply during the meeting at the office of the association in the Technical Academy, Munich, or may communicate with Herr Fink, 4, Pfandhausstrasse, Munich. The price of a ticket is 20 marks (£1). The Congress may have an interest for readers of THE LANCET who happen to be at the time in Munich on their return from the Tyrolese or Swiss Alps. The members of the Congress, ordinary and temporary, will be shown over the medical and other scientific institutions of Munich and the principal health-resorts in the neighbourhood. They will also be entertained by the authorities of Munich, the committee of the association, and the medical societies. Foreigners may become members, ordinary or extraordinary, under the same conditions as Germans.

Sept. 4th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

The Health of Italy and the Approach of the Tourist Season.

EVEN as the rise of the Nile is awaited in Lower Egypt with mingled hope and misgiving—hope that its fertilising, enriching waters may abound; misgiving lest they fall below the "average of good years"—so the wave of travel is expected in the Italian winter-cities and "sun-traps" to come down either in the force that means for them prosperity, or in the decrease that spells "ignoble straits." Already the signs of preparation for the "coming guests" are visible in all the chief health resorts and centres of attraction. The streets, allowed all the summer to relapse into their normal untidiness, are now being "swept" if not "garnished"; the shopkeepers are laying in fresh supplies of goods; the hotels are putting the last touches to their cleaning and decorative operations; the "laquais de place" is once more in evidence; and the Jehu of "vicarious locomotion," on the outlook for the "Inglesi," is even now so aggressive that we may shortly witness the Irishman's "evolutions" in the Piazza di Spagna—"throwing himself into a hollow square to resist charges of cabs." All these indications of welcome, however, if Italians only knew it, pale before the attractive power of the improved health-returns just issued by the Minister of the Interior, showing the good already fructifying from the regulations which His Excellency has imposed on the communes in the islands as on the mainland. It is now *de rigueur* on the part of each of these communes that they transmit their monthly health-bulletins to their respective prefects for revision and classification of the constituent data. The prefects in turn must send to the Minister of the Interior the said bulletins duly checked and classified, accompanied by an estimate of the health conditions of the communes summarised from the data in question. This work is performed at the instance of the prefects by the communal practitioners, and in this way the world has a set of trustworthy statistics, renewed from month to month, of the prevalence of disease and the rate of mortality throughout the kingdom. Out of 8262 communes 8249 have complied with His Excellency's mandate and 1786 have reported cases of infective disease, while 6463 have declared themselves free from any such visitation. To these figures, taken from the most recent monthly sanitary returns issued by the Minister of the Interior, may be added some others regarding individual maladies. Of the latter the most prevalent was measles, next come cases of typhoid fever which amounted to 1911, scarlet fever numbering 1134, and diphtheria, or as Italians prefer to call it "difterite," 1313 in all. The population of Italy, according to the latest census, amounts to 31,667,946 and in view of the above sanitary statistics it may be said that the health of the kingdom as a whole is good, while in the great majority of the communes it is excellent.

The Health of the Pope.

The supreme attraction of the winter and spring will be the Holy Year, beginning on Christmas Eve, 1899, terminating on Christmas Eve, 1900, and evoking all the pulpit eloquence at the command of the Church and all the impressive ceremonial proper to the occasion. 5,000,000 of the faithful, including all ranks, from the prince and the peer to the humblest member of the proletariat, are expected to come in relays, headed by their bishops, from every quarter of the globe and steps are already being taken to avoid overcrowding and the insanitary Nemesis which it entails. The more favoured of the arrivals will, of course, put up at hotels, the prices of which may naturally be expected to rise; but the caravans of pilgrims will be accommodated in the conventual establishments in which Rome abounds, or in "baracche," temporary structures run up for the occasion. The Pope, as he stated to the distinguished audience convened to congratulate him on his ninetieth observance of his "onomastico" (name-day), the Feast of St. Joachim, on August 20th, will not repeat the part performed by his predecessor, Leo XII., in 1825—the last Holy Year. He will not, that is to say, issue in state from the Vatican, make the round of the several basilicas barefoot, and grant indulgences with the apostolic benediction to the congregations with which these will be thronged. His participation in the ceremonies will be confined to St. Peter's and the Vatican. Even that, it is anticipated, will subject his energies, physical and mental, to a severe strain. Meanwhile it is satisfactory to know that after a month's "riposo" (indoor rest) he has been allowed by the Commendatore Dr. Lapponi since August 31st to resume exercise in the Vatican Gardens and to hold receptions or grant audiences in the "Casina Estiva" (summer residence) constructed for him their precincts.

Sept. 4th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

Plague in Alexandria.

THERE is nothing new to report about the plague. About once a week there is a new case found, dead or alive, sometimes Egyptian, sometimes among the poorer and more careless Europeans. The whole number of cases since May is 87, of which three are still under treatment, 42 have died, and 42 have recovered. There were as many as five cases in one police barracks, so that the men had to be turned out into a camp and the barracks to be thoroughly cleansed, but since then there have been no new cases there. When it looked as if the disease might be going to spread in the town the old slaughter-house just outside Alexandria was utilised and in ten days it was turned into a very fair infectious hospital of 100 beds. The chief difficulty was with the drains which had to be entirely remodelled. This temporary hospital in the desert, close to the sea, has been kept constantly ready for the instant reception of patients but has never yet been used. The Quarantine Board is now busying itself to try to ensure Egypt's protection from the plague in Europe. The Alexandria Municipality have very properly raised the salary of Dr. Gotschlich from £600 to £720 a year. He is their one bacteriologist and has been working very hard with various preventive sera.

The Greco-Roman Museum.

Alexandria no longer merits the reproach of possessing

nothing but one pillar of doubtful value to show the intelligent traveller, for the museum started six years ago now contains many valuable treasures and has just had added to it a magnificent marble bull, dating from Hadrian's time. Moreover, the presence of the museum has inspired many gifts from the richer Greeks of the town and there has been some systematic digging in the neighbourhood of Alexandria. Within the next few days a red granite column of the Ptolemaic period is to be joined to its long-lost capital and erected by the energy of Dr. Schiers and many friends as a memorial of the recapture of the Soudan. This is a happy way of celebrating the first anniversary of the battle of Omdurman. Enthusiasts believe that some day Alexander's tomb will be discovered and it may be possible to construct a chart of all the old wonders.

Dysentery and Abscess of the Liver.

Dr. Petridis, surgeon and bacteriologist of the Greek Hospital at Alexandria, has lately published a pamphlet to show that in his opinion neither of these diseases is caused by amœbæ. He finds that dysentery can be artificially produced in kittens by injecting directly into the rectum (1) human liver pus, whether sterilised or not and with or without amœbæ; (2) human dysenteric stools, with or without amœbæ, sterilised or not; (3) a culture of streptococci; or (4) pus from any abscess. He believes that the streptococcus sometimes accompanied by the staphylococcus is the true cause of both dysentery and hepatic abscess.

Troops in the Soudan.

The latest accounts from the Soudan say that the soldiers are suffering much discomfort from sandstorms and rain. The rainy season on the Blue Nile lasts from July to October, and it is to be hoped that the experience of last year has taught many lessons. While the Nile is low it is difficult to explore the unknown districts south of Khartoum, but when the river is high and access is easy malaria is the chief danger. Last autumn General Rundle proceeded with four battalions and cavalry flying the English and Egyptian flags to Rosaires which is now one of the civil posts. On their way they encountered a jungle consisting of great trees and undergrowths, in some places impassable. Once an English officer and his horse had to be cut out of the forest for they could move in no direction. At Karkog the troops were attacked most violently by malaria. It appears that 451 men reached this place on Nov. 3rd, 1898, and that on Nov. 20th 69 men were struck down. Two days later 380 men, or 82 per cent., of the small force were ill in their huts, and 10 of them died within a few days. Of the 13 English officers one died, six were seriously ill, and the remaining six suffered slightly from fever. It would be interesting to know what happened between Nov. 3rd and Nov. 20th. Was it a mosquito infection or had the men slight fever during those first days which was not severe enough to put them on the sick list? Karkog is a village about 300 miles south of Khartoum, and it is known that its inhabitants suffer much from malaria and anæmia. At Fashoda 70 Egyptian soldiers were in hospital in October out of a garrison of 600, and 60 of these were suffering from intermittent fever. It was said then that the French soldiers had no fever because they were supplied with mosquito nets and macintosh sheeting and because Dr. Emly insisted on their having as a prophylactic a daily subcutaneous injection of quinine. Ever since last autumn the Egyptian and black soldiers for the first time in their lives have had mosquito nets served out to them. But it was not all fever at Fashoda; there was big game shooting, too—water-buck, reedbuck, giraffe, hippopotamus, and the chances of an elephant or a lion. Lately the chief illness in the Soudan has been scattered cases of cerebro-spinal fever, but of these no report has yet been published.

Cairo, August 27th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Statistics of Diphtheria Antitoxin.

THE contention as to the value of serum treatment of diphtheria continues unabated in this country. The result is that the advocates of this treatment continue to accumulate statistics demonstrating its success. These statistics are gathered from the records of health boards and hence have a special value from their known accuracy. The latest contribution to these statistics is made by Dr. Biggs of the New York Board of Health. From his statement it appears that for immunising purposes 5108 patients were given injections varying in strength from 200 to 800 antitoxin units. Among these, 26 cases occurred, with one death, within the first 24 hours. Probably all of these were infectious before the immunising dose was given. From one to 30 days 23 cases occurred with one death—in a patient in whom the disease developed on the second day. 30 days later, seven cases occurred with two deaths; so that of the total number of persons immunised, each one having been more or less exposed to contagion, there were only four deaths in 56 cases. Since the introduction of the serum treatment in the city of Chicago in October, 1895, the total number of cases of true diphtheria treated by the Board of Health is 3822, with 259 deaths, or 6·7 per cent. Compared with the former mortality of 35 per cent. this proves a saving of about 1100 lives in a period of little more than two years. Reports also show a great reduction in the number of cases of diphtheria in New York city during the past year, compared with the six preceding years. This change is attributed to the general use of antitoxin, which lessens the severity of the disease, these cases being more apt to spread infection; to the use of antitoxin as an immunising agent; and to the care given to the inspection of schools.

Opticians as Oculists.

The practice of treating errors of vision by opticians without the advice of skilled oculists is fraught with so much mischief that the American Medical Association has taken steps to prevent it. During its recent meeting at Columbus, Ohio, the Association adopted the following resolution:—"It is the opinion of the American Medical Association that opticians are not qualified by their training nor are they legally qualified to perform the work of the oculist, and they should not be the consultants of regular physicians. Further, it is resolved that all physicians are requested to call their brother physicians in consultation, thus discountenancing the growing pretences or assurances of the optician and his brother, the 'graduate optician,' or as he is beginning now to call himself, the 'ophthalmotrician.'" The Optical Society of the State of New York disapproves of this position of the Association, and at a recent meeting expressed its opinion as follows:—"The society views with regret the unprofessional and unscientific attitude of those medical societies in adjacent States who are led by designing eye-specialists to adopt resolutions tending toward the estrangement of opticians and physicians. This society believes that the honourable occupation of an optician entitles him to the same courteous consideration at the hands of medical men as that now accorded to those following dentistry and other mechanico-scientific callings." The extent of the evils growing out of the unlicensed practice of opticians may be gathered from the following statement of a medical journal: "Of eight department stores taken at random in New York city, in the busiest retail shopping district, six conduct an optical department, three of which advertise the services of graduate opticians. At any of the six establishments spectacles may be bought over the counter at the choice of the customer, one number after another being tried until a fit is found. Practically the only difference between the stores which have opticians and those which have not is to be found in the presence on the counter of more or less imposing mechanical test appliances which are seldom used. The glasses most frequently sold are those for simple myopia or simple presbyopia. Cases of astigmatism by itself or complicated with lens deformity are met with the statement that the stock of that kind of glasses has just been sold out and a cautious recommendation to some eye clinic. On the day that the Optical Society was protesting against the action of the medical societies, an actual count along four blocks of Fulton-street and the two adjacent blocks on Broadway showed nine vendors of glasses whose stock was carried in barrows or in boxes slung by a strap about the neck. These vendors carried only a single line of glasses—those for 'old sight.'"

Endowment of Chairs in the Harvard Medical College.

The Harvard Medical School has just received by the will of the late Dr. Calvin Ellis the handsome gift of $400,000. This gift by the terms of the will is to be used for the benefit of the departments of anatomy, physiology, and pathology. Dr. Ellis was for a long time the dean of the medical school and also a professor. He was long troubled a the meagre salaries of the professors of the departments

of anatomy, physiology, and pathology, and by this generous gift these are now raised to $5000 a year. This limit being reached the remainder of the income is to be devoted to the departments named.

Effect of Modern Bullets.

Surgeons have been much interested in the experience gained during the late war as to the effects of modern bullets. Dr. Conner of Cincinnati, Ohio, gives the following interesting conclusions from his observations:—"The old bullets were heavy, round, slow, and their effect was of a smashing nature. The modern bullets are long, thin, pointed, light, and have a high velocity; their effect is perforating. At a range of, say, 1000 yards or more the modern bullet, however, has no greater momentum than the old. The 'smashing' effect of the old bullet was enormous. The wound of entry was often small, but the wound of exit was usually very large. The tissues about the wound of entry were violently contused and often became gangrenous. Suppuration was rendered almost certain by the devitalising influence of a large, heavy missile. The modern bullet may make a large or small wound of entry, but the wound of exit is never as large as that of the old bullet; the former devitalises the tissue little or none at all, so that healing is rapid and suppuration and gangrene are very rare. The old bullets exerted what is called an 'explosive' effect on the soft, solid organs—that is, the brain—and did an enormous and extensive damage; they scarcely ever 'lodged.' The modern bullets, contrary to all expectation, 'lodged' in the body in a surprisingly large proportion of cases. Reports vary, but some give the proportion of lodged bullets as high as 30 per cent. This was not due to the poor powder of the Spaniards, for this was tested and found to be as good as the powder of the Americans. In some cases the lodging may be explained by the fact that the bullets had first struck some intervening substance such as twigs, tree trunks, rocks, &c. Dr. Nancrede suggests the real reason—viz., that after a long range the new bullets rapidly lose their momentum and consequently their perforating power. Regarding the fatality of modern wounds this is notoriously low. Perforation of a joint or of the abdominal cavity instead of being an indication for, is in reality a contra-indication to, operation. The knee-joint was perforated 20 times during the Cuban campaign; each case recovered without operation. Flesh wounds healed with amazing rapidity. The 'first-aid package' proved itself immensely valuable and suppuration was very scarce."

August 18th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Health of Sydney.

THE first annual report of the medical officer of health (Dr. W. G. Armstrong) has been presented to the local authorities of the Metropolitan Combined Districts of Sydney. It began by a statement that the year 1898 had been memorable in the sanitary history of the metropolis owing to the operation of the new Health Act and the extensive powers which it conferred on municipal authorities—powers not made use of as they might be chiefly from want of funds. The Metropolitan Combined Districts include the city of Sydney and 47 other municipalities, with a total population estimated at 450,870, and an incorporated area of 127,236 acres. Some portions of the combined districts are sewered; most are unsewered and in these the methods of sewage disposal are for the most part similar. House slops were discharged into the street channels and excreta were dealt with on the single pail closet system, as a rule without the use of dry earth, ashes, or deodorants. A considerable number of cesspits still existed in the metropolitan district. Four local authorities had adopted the interchangeable pail system with satisfactory results, while the single pail system was an intolerable nuisance. The ultimate disposal of the night soil had given difficulty. Six local authorities sent it out to sea in punts, one seaside borough tipped it directly over the cliffs into the sea, and the remainder employed burial. All the depôts used for burial were in sparsely populated districts and did not call for interference on the ground of public health. Only seven municipalities had made arrangements for specially dealing with typhoid fever excreta. Dr. Armstrong was personally aware of over 30 instances in which typhoid excreta were buried in back yards of small allotments, and to this he attributed many cases of the disease. The dairy premises in the district were found to be very unsatisfactory, both as regards structure and in cleanliness and general management, and local authorities had not shown sufficient firmness in administering the Dairies Supervision Act. The general death-rate had increased, chiefly from severe epidemics of scarlet fever, measles, and whooping-cough. Typhoid fever had been less prevalent.

Prevention of Tuberculosis in Victoria.

A largely attended meeting of the medical profession was held in the hall of the Medical Society of Victoria on July 26th to consider the advisability of forming a Victorian Association for the Prevention and Cure of Tuberculosis. Sir T. N. Fitz-Gerald presided and it was resolved to call a public meeting to establish such an association. The city health officer, Dr. Jamieson, gave statistics showing the mortality from tuberculous diseases in Melbourne of late years. In the three years 1896-98 the average was 960 annually and in 1898 it was greatest—viz., 1045. The rate was lower than in other cities, but in other places the mortality from tuberculosis had considerably decreased of late years, while in Melbourne it was doubtful if there had been any substantial decrease since 1880. Dr. Gresswell, President of the Board of Health, had prepared statistics which differed from those given by Dr. Jamieson and which showed that the death-rate from tuberculosis was becoming less in Melbourne. He thought that the proposed association must endeavour to eradicate the disease from the lower animals as well as from man. The following were appointed a committee to make the necessary arrangements: Sir Thomas N. Fitz-Gerald, Professor Allen, Dr. Argyle, Dr. Bage, Mr. Branson, Dr. Daish, Mr. Gault, Dr. Gresswell, Mr. Kent Hughes, Dr. Jamieson, Mr. A. L. Kenny, Dr. Maudsley, Dr. McAdam, Dr. Murray Morton, Dr. Springthorpe, Dr. Stawell, Mr. G. A. Syme, Mr. Turner, and Dr. John Williams.

The Australian Health Society and the Milk-supply.

At the annual meeting of the Australian Health Society in 1897 it was decided to award certificates to dairymen and others concerning the wholesomeness of the milk which they supplied. A committee was appointed who found the subject surrounded with difficulties, but it has now been decided to issue certificates on the following plan. A dairyman who is desirous of obtaining the society's certificate must inform the secretary to that effect. A general inspection will then be made and if the conditions of the premises are evidently unsatisfactory the applicant will be so informed and the needed reforms will be pointed out. If the general conditions appear to be satisfactory medical and veterinary experts will then make further inspection, and will inquire into and report upon such premises. No certificate will be issued unless the cows as well as the premises, the mode of milking, and the storing and delivering of the milk are found to be satisfactory. Proof will also be required that all the cows milked at the time of the inspection have recently withstood the tuberculin test. The date of issue will be made a conspicuous feature of the certificate.

The Annual Report on Lunacy (Victoria).

In the annual report of the Inspector-General of Hospitals for the Insane in Victoria, just presented, it is stated that during the past year 573 patients have been absent from the asylums at various times under the provisions of Section 87 of the Lunacy Act, which allows patients to be liberated on probation under the charge of friends. The inspector remarks:—

"This mode of allowing patients who have improved but not quite recovered from mental derangement to leave the asylums under care of unpaid guardians may be said to have been attended with most satisfactory results, and the number of patients so liberated has been larger in Victoria than in any other part of the world. The system is valuable in many ways; it relieves to some extent the overcrowding of the asylums, aids the recovery of some patients who are depressed by asylum associations, and affords a chance of freedom to many whom no superintendent would accept the responsibility of discharging. So long as the present plan is continued there will be less difficulty for a harmless or improving patient obtaining his release from a Victorian asylum than, perhaps, from any similar institution in the world."

Various Hospital Matters.

Public attention in Melbourne has been a good deal directed to the various hospitals lately. It is the time of year when all the hospitals have their annual meetings and

very shortly, in August, the quadrennial election of the staff takes place at the Melbourne Hospital and at the Hospital for Women. The method of election by the subscribers to these institutions has been described in these columns before and it has been condemned by the medical and public press and by leaders of the profession all the world over. It continues all the same and in a recent address delivered by Dr. R. R. Stawell to the Melbourne Medical Students' Society it was denounced in very forcible and scathing terms. This year attention is chiefly concentrated on the Hospital for Women, where so-called "faggot" votes have been manufactured in exceptionally large numbers. During the months of May and June the sum of £1188 had been received in subscriptions, an increase of £1000 on the previous year, and 679 of the subscribers are out of the colony and vote by proxy. An appeal has been made to the committee to take steps to prevent abuse and suggestions have been offered, but without avail. At the Melbourne Hospital there will be practically no election. It seems to be recognised after the severe contests four and eight years ago that the present staff is too well established in popular favour for any outsider to have any chance of displacing any of the present members who are the only candidates for election, except for the position of physician to out-patients, where a quasi-vacancy exists. From the annual report of the committee of the Melbourne Hospital it appeared that the difference between the receipts and the expenditure for the year was £5880 and the accumulated debt of the maintenance fund was £26,454. Though the drift into debt is not stopped it has been reduced during the year to the extent of about £2000. During the year 5122 cases were admitted into the wards, and 16,565 were treated in the out-patient department. The number of in-patients discharged, either cured or relieved, is 3975, and 184 have been discharged as incurable. There have been 694 deaths, 261 of which occurred within 72 hours after admission. At the annual meeting of the Victorian Eye and Ear Hospital the chairman announced that for the first time in its history the institution was free from all debt.

July 29th.

Obituary.

JAMES CUMING, M.A., M.D., D.Sc. R.U.I., F.R.C.P. IREL.,

PROFESSOR OF MEDICINE AT QUEEN'S COLLEGE, BELFAST, AND PHYSICIAN TO THE BELFAST ROYAL HOSPITAL.

THE medical profession in the north of Ireland has sustained a severe loss in the death of Dr. James Cuming. During his lengthened professional life Dr. Cuming enjoyed remarkable health until, in the winter 1897–98, he suffered from influenza of a relapsing type. He fought bravely against it, despite the warnings of his medical colleagues, until towards the end of the winter session at Queen's College, Belfast (April, 1898), when he completely broke down, suffering from laryngeal and bronchial catarrh and cardiac dilatation. A rest for some months at his beautiful seaside residence on the borders of Belfast Lough had a beneficial effect and he was able during the greater part of last winter to do his professorial work with the assistance of Dr. J. A. Lindsay, and to see patients at his own house, although he was obliged to decline country consultations as any slight exertion told on him. He still kept to work manfully and accepted an invitation from his friends (and patients), the Right Hon. W. J. and Mrs. Pirrie, to go to America on the trial trip of the *Oceanic*. He thoroughly realised his own precarious condition, for he stated to a medical friend who saw him on Friday afternoon, August 25th, that he had decided on taking this voyage, but added in a quiet, solemn manner, "If nothing happens between this and the day of sailing." He was in Belfast on the next day seeing patients. On that night at his country residence—Greenisland—he had a severe attack of cardiac asthma. He took little food during the following day, and towards midnight on August 27th he had another seizure and died suddenly in the presence of the members of his family. During his lengthened illness his medical colleagues were unremitting in their attention to him, each in turn suggesting some remedy or giving some hint to one who had so often helped them when called in consultation.

Dr. Cuming was an Ulsterman, the son of a merchant in Markethill, county Armagh, where he was born in 1833. He was sent to the local school where there was a good classical teacher, and where he became imbued with that love for the ancient literature of Greece and Rome which had so marked an influence on his after career. He then went to the Royal School at Armagh and subsequently entered Queen's College, Belfast, in 1849–50, the first year in which the college was opened. He studied medicine first and after a most brilliant course he graduated in 1855 M.D. of the late Queen's University. He subsequently went through the Arts Faculty with equal distinction and became an M.A. in 1858. In both departments (Arts and Medicine) he was a distinguished scholar. His taste for chemistry attracted the attention of Dr. Thomas Andrews who was professor of chemistry and who subsequently became President of the British Association. Dr. Andrews recognised the great ability of his pupil and supported him most cordially when he subsequently became a candidate for the professorship of medicine. Dr. Cuming was also a Fellow of the King and Queen's Colleges (now the Royal College) of Physicians of Ireland. After graduation Dr. Cuming studied on the Continent, where he gained a thorough knowledge of French and German which he read and spoke with ease. He had also an excellent knowledge of Italian. While residing in Paris he was a pupil of Charcot, and in this way began his love for the study of diseases of nerves. His old house physicians and pupils will recollect with what clearness and enthusiasm he lectured on a case of diplegia, tabes, or disseminated sclerosis at a time when knowledge of these diseases was much less well-defined than it is now. Returning to Belfast in 1863, the year 1865 was the turning point in his career, for it was then he became Professor of Medicine in Queen's College (on the death of Dr. J. C. Ferguson) and also physician to the Royal (General) Hospital. He was then scarcely more than 30 years of age, and from that time—a period of 34 years—he has held both posts, and has taught the great majority of the medical men who have practised since then in Ulster and many who have occupied prominent positions in all parts of the world. In the Queen's College he took the deepest interest. He was a member of the governing body and gave the most sagacious advice in all matters pertaining to the medical school. At the Royal Hospital he was chairman of the medical staff and during the last two years he devoted a great deal of his time to furthering the scheme for the building of the New Royal Victoria Hospital and, as showing his progressive type of mind, he supported very warmly the advanced and original plans prepared by the architect of this new hospital.

Dr. Cuming took a deep interest in asylum work; he was chairman of the Board of Governors of the local institution and at the time of his decease was engaged in the consideration of plans for an epileptic colony at Purdysburn. He was the Lord Chancellor's Visitor in Lunacy. Dr. Cuming occupied a unique position in the medical profession in Belfast, of which he may be truly said to have been the *doyen*; almost all his own compeers had died; the younger members of the profession had in the main been his old pupils; their respect for him as their friend and teacher became strengthened with advance of years, and almost every little difference that arose on professional matters was referred to him for his opinion and his decision was loyally accepted. He was President of the Ulster Medical Society and of the North of Ireland Branch of the British Medical Association, and in 1884 when the British Medical Association visited Belfast he was President. Dr. Cuming was a man of the most diverse tastes and he was of an extremely cultured mind. A thorough classic (Horace was his favourite poet) and fond of philosophy, he had also an excellent knowledge of English, French, and German literature; indeed, it has been often said that he was quite as strong as a philosopher or as a litterateur as he was as a physician. With a massive head, a sphinx-like face, and a commanding presence the public looked on him as one of an austere habit; in private life he was a delightful companion, full of Hibernian wit and humour. He was most social in his tastes, and as an after-dinner speaker he was seen to special advantage, his amusing badinage and playful wit bubbling over in every sentence.

Dr. Cuming was a model professor, his lectures being clear, logical, and well-arranged, and a cautious physician whose long and extensive experience prevented him from being dogmatic. He had an extremely level head and he was

regarded as the "wise man" of the profession. Nowhere was he seen to greater advantage than when presiding at a meeting where there was a distinct divergence of opinion. On such occasions his fairness, his good humour, his toleration, and his love of compromise suggested a way out of many a difficult situation. The medical profession in Ireland, the Belfast Medical School and Queen's College, and the community at large have suffered an irreparable loss in the death of Dr. Cuming. He leaves two children—a daughter, married to the eldest son of Lord Russell of Killowen, and a son, a member of the English Bar. His wife died some years ago. By his decease two important posts become vacant—the Professorship of Medicine in Queen's College, Belfast, and the physicianship to the Belfast Royal Hospital.

DAVID HUGHES CHARLES, M.D. GLASG., L.R.C.S. EDIN., J.P.

WE have to announce the death, at the advanced age of 81 years, of one of the fathers of the medical profession in the north of Ireland, Dr. David H. Charles. He was even of late years in his usual health, occasionally practising, except that he felt weakened by an attack of influenza. On August 17th he went to Oxford on a visit to his son, Professor Robert Charles, where he died from hæmorrhage from a gastric ulcer at his son's residence on August 21st. Dr. Charles studied at Glasgow University, where he graduated M.D. in 1843, and in Edinburgh, where he obtained the L.R.C.S. in the same year. He also for a time was a student in Dublin. Ever since qualifying he practised in Cookstown, co. Tyrone, where for nearly 50 years he was one of the most prominent men. Since 1857 he was a member of the Town Commissioners of that place and for 33 years he had been either an elected or an *ex-officio* member of the board of guardians. He was made a J.P. for the county of Tyrone in 1886 and at the recent Local Government Board election he was returned to the town board and was elected vice-chairman. He was also coöpted on the district council. Dr. Charles was a man of striking individuality. With a sound knowledge of his profession he combined marked business qualities and was the type of an Ulsterman who would have succeeded in any position. A strong advocate of total abstinence he attributed his great vitality to this practice combined with hard work and outdoor exercise. He had a large family and he had the pleasure of seeing his sons occupying most distinguished positions. His oldest son, Dr. J. J. Charles, is Professor of Anatomy and Physiology in Queen's College, Cork, and was President of this section at the late meeting of the British Medical Association. His second son, Dr. T. C. Charles (lately deceased), was Lecturer on Physiology at St. Thomas's Hospital; another son, Dr. Daniel Charles, was in practice in Cookstown where he died. Another, Major Havelock Charles, I.M.S., is Professor of Surgery and Descriptive Anatomy in the Medical College, Calcutta; while the son with whom he was staying when he died, the Rev. Robert Charles of Oxford, was recently appointed to a chair in Trinity College, Dublin. Great regret is felt at the death of Dr. Charles.

JOHN DUNCAN, M.A., M.D., LL.D., F.R.C.S., F.R.S. EDIN.

DR. JOHN DUNCAN died suddenly from cardiac disease in his sixty-first year at his shooting lodge in Skye on August 24th. Endowed by nature with a finely chiseled, expressive, thoughtful face, a powerful, well-shaped head, and a commanding, tall, handsome figure, he was destined to take a leading place in any community and in any profession. As a boy at the High School of Edinburgh he was prominent among his fellows, and as a student and graduate in Arts and in Medicine of the University of Edinburgh he occupied a distinguished position. He was a master in all athletic sports, and few could hold their own with him in the cricket field or on the golf course. He was a great pedestrian, a powerful swimmer, a noted deer-stalker and rifle shot, and one of the best salmon fishers in Scotland. He greatly distinguished himself as a surgeon and a teacher of surgery at the Royal Infirmary of Edinburgh and elsewhere and in private practice, being an excellent operator, as was his father, the late Dr. James Duncan, before him. Nothing came amiss to him in surgery. Precise as to his methods, very careful in preparation, conservative as to the shedding of blood, scrupulously clean as regards instruments and other appliances he obtained splendid results even as apart from antiseptics. He in many cases saved life by the transfusion of blood before operations and his application of electrolysis to aneurysms, nævi, &c., gained for him a world-wide reputation. More than once he was asked to become Member of Parliament for the Universities of Edinburgh and St. Andrews. He, however, preferred to devote his life to his patients, his friends, and his family. Honoured of all men he in due time became the President of the Royal College of Surgeons of Edinburgh, and made one of the largest and best practices in Edinburgh. He owned one of the finest houses in Edinburgh, which was always open to his friends and to distinguished visitors from all countries. In addition to his town house he had a shooting and fishing establishment in the Highlands, and thither were invited in relays his more immediate friends. He was a member of the Edinburgh University Court, a manager of the Royal Infirmary of Edinburgh, a director of the Commercial Bank, medical officer for the Scottish Provident Institution Insurance Company, chairman of the Conservative Association, &c. He held many public appointments and was a fellow of many learned societies. Dr. Duncan was an industrious, hard worker, an omnivorous reader, and an artist of no mean order. Some of his fine sketches in water colours and in oil were quite worthy of a place in the Academy, although he never sought distinction through this channel. Learned and cultured he was in addition a philosophic thinker and wrote in a style which was at once clear, vigorous, and terse. He was the author of many valuable papers, but the regret is that he did not write more. Of course his hospital connexion and his practice, to say nothing of the arduous work which he performed as a teacher of surgery, largely accounted for this. Dr. Duncan had aged rapidly in appearance during the past few years, and some months ago he went to Bath on account of his health, but none of his brethren who had recently seen him would have thought that death was so soon and so suddenly to claim him.

GEORGE YEATES HUNTER, M.R.C.S. ENG., L.S.A., BRIGADE-SURGEON INDIAN ARMY (RETIRED).

As already briefly announced in our columns Brigade-Surgeon Hunter died at his residence, 48, Philbeach-gardens, South Kensington, on August 11th, in his sixty-ninth year. He was the eldest son of the late Mr. George Yeates Hunter of Margate. His medical education was obtained at St. George's Hospital and in 1853 he became qualified as M.R.C.S. Eng. and L.S.A. Brigade-Surgeon Hunter had about thirty years' Indian service, during which he was civil surgeon in Nimar, at Bhooj, Sholapoor, Kaladghi, and at Karachi. He was also second surgeon of the Sir Jamsetjee Jeejeebhoy Hospital, curator of the Museum of the Grant Medical College, Bombay, superintendent of the Bombay Lunatic Asylum, and presidency surgeon, Bombay. He had the medal for service in the Abyssinian campaign of 1867 and also took part in the Malta expedition. Brigade-Surgeon Hunter was the author of "Body and Mind," "Medical Hints for the Districts," "Health in India," "Domestic Medicine for Home and Abroad," and in addition compiled the "Medical Code" by order of the Government. He retired from the army in 1888.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Professor J. Erhard, formerly Director of the Coburg Scientific collections. In early life he was assistant to Professor von Schauroth, an eminent surgeon.—Dr. F. Poncet, formerly Professor in the Val-de-Grâce Military Medical School.—Dr. Herxheimer, a well-known Frankfort dermatologist, in the Tyrol, at the age of 57 years.—Dr. K. J. Brühl, formerly Professor of Zootomy in the University of Vienna. He had previously held professorships in Cracow and Budapest. In Vienna he founded the Zootomical Institute. He retired into private life some nine years ago. He was 80 years of age at his death.

Medical News.

THE ROYAL INSTITUTE OF PUBLIC HEALTH.—The Congress of this Institute will be held at Blackpool from Sept. 21st to Sept. 28th inclusive. From a preliminary programme which we have received we learn that the Marquis of Lorne will deliver the presidential address in the Grand Theatre on Thursday, Sept. 21st, at 11 A.M. With regard to the Congress it is stated that the objects of the Institute are: (1) to provide means for medical practitioners possessing registrable qualifications in public health, state medicine, or sanitary science, medical officers of health, medical officers of the navy and army, and sanitarians in general, &c., of discussing, by intercourse and otherwise, all questions having for their object the improvement of the public health; (2) to aid the theoretical and practical investigation and study of all branches of public health and state medicine; (3) to institute lectures and demonstrations and publish the results thereof; (4) to hold hygienic congresses; and (5) to hold examinations in hygienic and sanitary subjects. In consequence of the considerable advances made in sanitary legislation and the growing necessity for meeting the requirements of domestic and public hygiene it becomes a matter of vital importance that sanitarians and all others interested in the welfare of public health should be afforded the opportunity of assembling and exchanging views and suggestions at meetings such as a congress alone affords. Section A will deal with preventive medicine and vital statistics, Section B with chemistry and meteorology, Section C with engineering and building construction, and Section D with municipal and parliamentary matters touching public health. There will be a Health Exhibition in connexion with the Congress. A special section of the exhibition has been devoted to appliances for smoke abatement and for appliances for the economical consumption of fuel, the object being the much-needed improvement of the smoke-polluted air of cities and towns. This section has had the immediate help and support of the Smoke Abatement League, to whom the committee express their indebtedness. The public and private means of preventing fire and the saving of life from fire has engaged the committee's attention. With the object of encouraging fire companies in private establishments a competition will take place during the exhibition among such companies. The honorary secretary of the Congress is Dr. A. Jasper Anderson, Public Health Office, Blackpool, who will gladly supply any information.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bordeaux:* Dr. Cannieu has been appointed Professor of Anatomy in succession to Dr. Bouchard, deceased.—*Kharkoff:* Dr. Gulevich of Moscow has been appointed Extraordinary Professor of Medical Chemistry.—*Nancy:* Dr. Joseph Rohmer has been appointed Professor of Clinical Ophthalmology.—*Rome:* Dr. E. Rossoni has been promoted to be Ordinary Professor of Clinical Medicine.—*Warsaw:* Dr. H. Kostenicz has been appointed Extraordinary Professor of Ophthalmology.

THE NEW MEDICAL CURRICULUM, MELBOURNE UNIVERSITY.—The new curriculum of medical study proposed by the Faculty of Medicine for the University of Melbourne has been considered by a committee of the Senate of the University and with some slight amendments (providing for an examination in elementary surgery and in surgical anatomy in the fourth year) has been agreed to by both the Senate and the Council of the University. It would appear to be a considerable improvement on the present course, but it remains to be seen how it will work in practice. It diminishes very considerably the number of systematic lectures and increases the amount of practical and hospital work.

PRESENTATION.—On August 23rd Mr. William Hall, M.R.C.S. Eng., of Tottenham, was presented by the local police with a silver cup on his retirement from the position of divisional surgeon after a period of 57 years' service.

THE MEDICAL OFFICER OF HEALTH OF BATH.—The Corporation of Bath recently appointed Dr. W. H. Symons as medical officer of health for that city at a salary of £450 per annum upon his undertaking to devote the whole of his time to the duties. The Local Government Board, upon being asked to sanction the appointment, replied that they could not do so unless the salary was at least £500 per annum. At a meeting of the Sanitary Committee held recently it was decided to inform the Local Government Board that the committee could not alter their decision.

DUXHURST INEBRIATE REFORMATORY.—On the application of Lady Henry Somerset the Home Secretary has certified that the above-mentioned reformatory is now fit for the accommodation of 16 inmates.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

ACLAND, H. T. D., L.R.C.P., M.R.C.S., has been appointed a House Surgeon to St. Thomas's Hospital.

BARNES, J. A., L.R.C.P., M.R.C.S., has been appointed Junior Ophthalmic House Surgeon to St. Thomas's Hospital.

BEALE, H. R., L.R.C.P., M.R.C.S., has been re-appointed a Clinical Assistant in the Special Department for Diseases of the Skin at St. Thomas's Hospital.

BEVAN, A., L.R.C.P., M.R.C.S., has been appointed a House Physician to St. Thomas's Hospital.

BOURDAS, E. C., L.R.C.P., M.R.C.S., has been appointed an Assistant House Surgeon to St. Thomas's Hospital.

BREBNER, C. S., M.B., Ch.B. Edin., has been appointed House Surgeon to the Durham County Hospital.

BUCK, THOMAS ALPHEUS, M.B. Lond., has been appointed Admiralty Surgeon and Agent at Ryde, Fishbourne, and Seaview.

DAVIES, L. G., M.D. Cantab., has been appointed Medical Officer for the Workhouse and the Children's Homes of the Middlesborough Union, vice J. H. Powell, resigned.

EDINGTON, GEORGE H., M.D., M.R.C.S. Eng., L.R.C.P. Lond., F.F.P.S. Glasg., has been appointed extra Dispensary Surgeon to the Royal Hospital for Sick Children, Glasgow.

ELLIS, F. H., B.A., M.B., B.C. Cantab., L.R.C.P., M.R.C.S., has been appointed an Assistant House Physician to St. Thomas's Hospital.

GAFF, J., L.R.C.P., M.R.C.S., has been appointed a House Physician to St. Thomas's Hospital.

GALLWEY, T. J., C.B., M.D., M.Ch. Irel., has been appointed President of a Board of Medical Officers which is to examine candidates for commissions in the army in London.

GATES, E. A., L.R.C.P., M.R.C.S., has been appointed an Assistant House Surgeon to St. Thomas's Hospital.

HAWKINS, C. L., B.A. Cantab., L.R.C.P., M.R.C.S., has been appointed a Clinical Assistant in the Special Department for Diseases of the Throat at St. Thomas's Hospital.

HAWKINS, WM., M.R.C.S., has been appointed Medical Officer for the Upway Sanitary District of the Weymouth Union, vice J. W. Pridham.

HOBAN, T., L.R.C.P., M.R.C.S., has been appointed Senior Ophthalmic House Surgeon to St. Thomas's Hospital.

HOWLETT, B. F., L.R.C.P., M.R.C.S., has been appointed an Assistant House Physician to St. Thomas's Hospital.

JONES, A. WEBB, L.R.C.P., M.R.C.S., has been appointed an Assistant House Surgeon to St. Thomas's Hospital.

KENDALL, B. C., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the parish of Wendron, in the Helston Union.

LEAH, T. NOY, L.R.C.P. Lond., M.R.C.S., has been appointed Surgeon to the Provident Dispensary of the Royal Albert Hospital, Devonport.

LINDLEY, L. H., B.A., M.B., B.Ch. Oxon., has been re-appointed a Clinical Assistant in the Special Department for Diseases of the Throat at St. Thomas's Hospital.

LIVINGSTONE, THOS. H., M.B., Ch.B. Edin., has been appointed House Surgeon to the Rochdale Infirmary.

LUCAS, S. A., L.R.C.P., M.R.C.S., has been appointed a House Surgeon to St. Thomas's Hospital.

MACVICKER, C. G., M.B., B.Ch. Irel., has been appointed Medical Officer for the Fourth Sanitary District of the Wells Union, vice F. J. Malden, resigned.

MARTIN, A. E., B.A. Cantab., L.R.C.P., M.R.C.S., has been appointed a Clinical Assistant in the Special Department for Diseases of the Ear at St. Thomas's Hospital.

MAYNARD, G. D., M.R.C.S., L.R.C.P. Lond., has been appointed Junior Out-patient Surgical Officer to the Royal London Ophthalmic Hospital, City-road, London.

MORRIS, J. J. NIXON, L.R.C.P. Lond., M.R.C.S., has been appointed (Honorary) Assistant Surgeon to the Royal Albert Hospital, Devonport.

PATCH, H. H. L., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Second and Third Sanitary Districts of the Hertford Union, and Public Vaccinator for certain portions of those districts.

PERRIN, T., L.R.C.P., M.R.C.S., has been appointed a Clinical Assistant in the Special Department for Diseases of the Skin at St. Thomas's Hospital.

PHILLIPS, H. J., L.R.C.P., M.R.C.S., has been appointed a House Surgeon to St. Thomas's Hospital.

RAYNER, H. E., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Medical Officer and Public Vaccinator for Frimley by the Farnham Board of Guardians.

ROBINSON, E., M.D. Edin., C.M., has been appointed Medical Officer for the Frensham Sanitary District of the Farnham Union.

ROSS, E. H., L.R.C.P., M.R.C.S., has been re-appointed a House Physician to St. Thomas's Hospital.

SARGENT, P. W. G., M.A., M.B., B.C. Cantab., L.R.C.P., M.R.C.S., has been appointed a House Surgeon to St. Thomas's Hospital.

SCAPING, H. M., B.A. Cantab., L.R.C.P., M.R.C.S., has been appointed Senior Obstetric House Physician to St. Thomas's Hospital.

SHARMAN, MARY NONA, M.B. Lond., has been appointed Lady Medical Officer in Ceylon under the Colonial Government.

STEVENS, A. E., M.B. Durh., L.R.C.P., M.R.C.S., has been appointed Junior Obstetric House Physician to St. Thomas's Hospital.

STODDART, F. W., has been re-appointed Borough Analyst for Bridgwater.

TAYLOR, FRANK E., M.A., M.B., M.Sc. Vict., M.R.C.S., L.R.C.P., has been appointed Assistant Resident Medical Officer to Queen Charlotte's Lying-in Hospital, London.

TETLEY, T. W., M.R.C.S., L.R.C.P., has been appointed a House Physician to the General Infirmary at Leeds.

THORP, H. C., M.A., M.B., B.C. Cantab., has been re-appointed a House Physician to St. Thomas's Hospital.

THURNELL, N. L., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Gravesend Sanitary District of the Gravesend and Milton Union, vice J. Gramshaw, resigned.

UNSWORTH, N., L.R.C.P., M.R.C.S., has been appointed an Assistant House Surgeon to St. Thomas's Hospital.

WILKIN, G. C., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Second Sanitary District of the Yeovil Union, vice J. Eadie.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

AYR COUNTY HOSPITAL, Ayr.—House Surgeon for one year. Salary £50 per annum, with residence, board, and washing.

BARNWOOD HOUSE HOSPITAL FOR THE INSANE, Gloucester.—Junior Assistant Medical Officer. Salary £120 per annum, with board, &c., rising to £140 per annum.

BIRMINGHAM WORKHOUSE.—Qualified Medical Man for three weeks. Salary £3 3s. per week, rations, apartments, washing, and attendance provided. Apply to the Clerk to the Guardians, Parish Offices, Birmingham.

BOROUGH ASYLUM, Portsmouth.—Junior Assistant Medical Officer. Salary £120 per annum, increasing by three equal annual increments to £150, with board, lodging, and washing.

COUNTY ASYLUM, Prestwich, Manchester.—Assistant Medical Officer, unmarried. Salary £125, increasing yearly by £25 to £250, with board, apartments, washing, &c.

CAMBRIDGESHIRE, &c., LUNATIC ASYLUM, Fulbourn, near Cambridge.—Assistant Medical Officer. Salary £140 per annum, with board, lodgings, and attendance in the Asylum.—Apply to the Clerk to the Visitors, Cambridge.

CUMBERLAND AND WESTMORLAND ASYLUM, Garlands, Carlisle.—Junior Assistant Medical Officer, unmarried. Salary £100 a year, with board and residence.

DEVON COUNTY ASYLUM, Exminster.—Two Assistant Medical Officers. Salary of the first, £120 per annum, increasing annually by £10 to £150, and the salary of the second £100, rising as above to £130, with, in both cases, board, lodging, and washing. Also Locum Tenens for four weeks. Salary £3 3s. per week, with board, lodging, &c.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing. Also Assistant House Surgeon. Board and washing provided.

GENERAL INFIRMARY AT GLOUCESTER AND THE GLOUCESTERSHIRE EYE INSTITUTION.—Assistant Physician.

GREAT YARMOUTH HOSPITAL.—House Surgeon. Salary £90 per annum, with board, lodging, and washing, and £10 extra for elementary lectures to probationer nurses.

MANCHESTER CLINICAL HOSPITAL FOR WOMEN AND CHILDREN, Parkplace, Cheetham-hill-road.—House Surgeon. Salary £80 per annum, with apartments and board.—Apply to the Secretary, 38, Barton Arcade, Manchester.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Resident Medical Officer for the in-patient department, Bowdon, Cheshire. Salary £60 per annum, with board, apartments, and washing.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £70 per annum, with residence, board, and washing.

METROPOLITAN ASYLUMS BOARD.—Two Assistant Medical Officers at the Darenth Asylum, near Dartford, Kent, and one at the Leavesden Asylum, near Watford, Herts. Salary £120 per annum, rising, conditionally, to £150, with board, lodging, attendance, and washing, subject to statutory deductions. Apply at the office of the Board, Norfolk-street, Strand, London.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-upon-Trent.—Assistant House Surgeon, board, apartments, and washing provided. Also House Surgeon. Salary £120 per annum, increasing by £10 per annum, conditionally, with furnished apartments, board, and washing.

OXFORD EYE HOSPITAL.—Honorary Assistant Surgeon.

PRESTON ROYAL INFIRMARY.—Assistant House Surgeon. Salary £50 per annum, with board, lodging, washing, &c.

QUEEN'S COLLEGES, Ireland.—Professor of Medicine in the Queen's College, Belfast. Apply to the Under Secretary, Dublin Castle.

ROYAL ALBERT ASYLUM, Lancaster.—Resident Medical Officer. Salary £400 per annum, advancing to £450, with furnished house, coals, gas, milk, and vegetables.

ROYAL HALIFAX INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with an extra allowance of £9 2s. 6d. per annum, and residence, board, and washing.

ROYAL SEA-BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £52, with board and residence. Apply to the Secretary, Royal Sea Bathing Hospital Offices, 30, Charing-cross, London.

ROYAL SOUTH HANTS INFIRMARY, Southampton.—House Surgeon. Salary £100 per annum, with rooms, board, and washing.

ST. MARY'S CHILDREN'S HOSPITAL, Plaistow, E.—Assistant Resident Medical Officer for six months. Salary at the rate of £50 per annum, with board, lodging, and washing.

STOKE-UPON-TRENT UNION.—Resident Medical Officer for the Workhouse. Salary £100 for the first year, £110 for the second year, and £120 for the third year, with board, washing, and furnished apartments at the hospital; subject to statutory deductions. Apply to the Clerk to the Guardians, Union Offices, Stoke-upon-Trent.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

VICTORIA HOSPITAL FOR CONSUMPTION, Edinburgh, Out-patient Department.—Non-resident Clinical Assistant for six months. Salary at the rate of £60 per annum.

WEST HERTS INFIRMARY, Hemel Hempstead.—House Surgeon and Dispenser, unmarried. Salary £100 per annum, with furnished rooms, board, fire, light, attendance, and washing.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician and House Surgeon for six months.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY, Whitehaven.—House Surgeon. Salary £120 per year, and £30 annually for dispensing, with furnished apartments and attendance.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL, Wolverhampton.—Assistant House Physician for six months. Honorarium at the rate of £50 per annum given, and board, lodging, and washing provided.

Births, Marriages, and Deaths.

BIRTHS.

ATKINSON.—On July 26th, at the Government Civil Hospital, Hong-Kong, the wife of J. M. Atkinson, M.B. Lond., of a son.

COLBECK.—On Sept. 5th, at Porchester-terrace, Hyde-park, W., the wife of E. H. Colbeck, M.D. Cantab., M.R.C.P. Lond., of a son.

JONES.—On Sept. 2nd, at Southgate, Eckington, Sheffield, the wife of G. H. West Jones, M.R.C.S., L.S.A., of a daughter.

WARREN-DAVIS.—On Sept. 5th, at Dorset-square, the wife of John Warren-Davis, M.R.C.S., L.S.A., of a son.

MARRIAGES.

BARRY—LEPPINGTON.—On August 30th, at St. Mary Abbots, Kensington, by the Rev. D. Aikin-Sneath, M.A., James William Barry, L.R.C.P. Lond., M.R.C.S. Eng., younger son of the late James Joseph Barry, M.R.C.S. Eng., of Ramsgate, to Ann Elizabeth, second daughter of the late Hildyard Marshall Leppington, J.P., M.R.C.S. Eng., of Great Grimsby.

BLOMFIELD—MILES.—On Sept. 5th, at St. Nicholas Church, Sutton, Surrey, by the Rev. H. W. Turner, M.A., Rector, Alfred Bealy Blomfield, M.R.C.S., L.R.C.P., L.S.A., third son of Josiah Blomfield, Esq., M.D., F.R.C.S., of Rye-lane, Peckham, to Ellen Mary (Nellie), only daughter of John Frederick Miles, Esq., of Cressingham-grove, Sutton.

DASHWOOD-HOWARD—BETTS.—On Sept. 6th, at St. James's Church, Hampton-hill, S.W., by the Rev. C. R. Job, M.A., vicar of Hampton-hill, assisted by the Rev. Howard Beech, A.M., rector of Great Bealings, Suffolk, cousin of the bridegroom, Arthur Dashwood-Howard, B.A., M.D., M.R.C.S., L.R.C.P., F.R.M.S., only child of J. Jackson Howard, LL.D., F.S.A., Maltravers Herald Extraordinary, of Blackheath, Kent, to Melita Margaret, only child of the late Walter Betts, of Gately Hall, Norfolk.

DENT—MITCHELL.—On August 31st, at St. John's Church, Clifton, Bristol, Ernest Albert Dent, M.B., C.M. Edin., of Cheltenham, to Mary Stewart Mitchell, third daughter of the late Captain J. M. Mitchell of Georgefield, Uddingston, N.B.

LUCAS—BASSETT.—On August 31st, by the Rev. J. H. Jowett, M.A., Albert Lucas, F.R.C.S., of 9, Easy-row, Birmingham, to Edith Hannah, younger daughter of the late John Bassett, M.D., of Handsworth.

MOORE—PRICE-DENT.—On August 31st, at Hallaton Parish Church, James Lennox Irwin Moore, M.B., C.M., of Stafford Lodge, Market Harborough, to Georgina Roberta, second daughter of the late Major-General R. H. Price-Dent, B.S.C., J.P., of the Manor House, Hallaton, Leicestershire.

RUSSELL—CURRIE.—On Sept. 5th, at Stephen's Church, Edinburgh, Francis Rutherfurd Russell, M.D., Guildford, Surrey, to Mary Maxwell, second daughter of James Currie, Trinity Cottage, Edinburgh.

STEVENS—REEVES.—On August 31st, at St. Peter's Church, Eltham-road, by the Rev. Richard Owen, M.A., vicar, Thomas George Stevens, M.D. Lond., F.R.C.S. Eng., M.R.C.P. Lond., of 8, St. Thomas's-street, S.E., eldest son of G. J. B. Stevens, Esq., M.R.C.S. Eng., L.R.C.P. Lond., of Newington-green, N., to Lizzie, eldest daughter of John Reeves, Esq., of Ecclesbourne, 85, Eltham-road, Lee, S.E.

DEATHS.

DICKINSON.—On July 24th, at Bridgetown, Western Australia, the result of an accident, James Dickinson, M.B. Lond. (Westm.), the beloved brother of Emilie Cooper Bentham.

HOGBEN.—On Sept. 4th, suddenly, at his residence, Strathmigh, Fifeshire, Edgar Hogben, M.D., in his 39th year.

STUART.—On August 29th, at Shevington Hall, John Barlow Stuart, J.P., F.R.C.S. & L.S.A. Edin., and L.R.C.P. Lond., aged 48 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

"THE GEOGRAPHY OF MEDICAL ETHICS."

IN our issue of June 10th we published a letter signed S. and some editorial remarks thereon. S. complained that he had met with discourteous treatment at the hands of G. We now publish a letter from G. which certainly puts a different complexion upon the remarks of S. If G. advertises himself in the local newspapers as "Professor livre"—i.e., *privat-docent*—of Copenhagen University, which he actually is, so also does S. advertise himself in the newspapers as "Dr. S.," and S., we note, is only "Dr." by courtesy and not of right.

We have not printed the whole of G.'s letter, but it is only fair to him to state that he has laid before us letters from (1) the husband of the lady mentioned as being attended by G. in a confinement; and (2) from officials of the bank.

Both these letters directly traverse the statements of S. The husband of the lady states that so far from thinking it strange he asked G. to attend his wife and that G. said that the matter must be explained to S. The bank officials write disclaiming the idea that the bank dispensed with S.'s services on account of G.'s return. The determination to make a change, they state, dates from "quite two years back."

In addition to these letters we have others showing that S. is not, to put the case mildly, so observant of the rules of medical etiquette as he should be. G., we may remark, is willing and anxious to sign his name, but as we have hitherto mentioned no names we have thought it better to keep the anonymity. G., however, has supplied us with full documentary material for everything we have written.

"MEDICAL ETHICS IN DENMARK."

To the Editors of THE LANCET.

SIRS,—About a month ago happening to glance through the pages of THE LANCET of June 10th—a copy of which was sent to me some weeks ago anonymously and without any note or outward indication that it contained matter of special interest to me—I saw your article headed "The Geography of Medical Ethics" and immediately beneath it a letter signed "S." which, purporting to treat of medical ethics in Denmark, contains an attack on my honour and professional reputation. S. describes me as a Danish gentleman announcing himself in the newspapers as "Professor livre da Universidade de Copenhague." The wording of this passage, pregnant as it is with disingenuous and unworthy suggestion, cannot be, I think, in harmony with the best traditions of medical ethics in England. Now, medical ethics are, and will to some degree always be, different in different parts of the globe, and in announcing myself in the newspapers I follow the practice universally adopted by the profession in South America, including S. himself (*vide* newspaper enclosed). And in styling myself "Professor livre" I make use of the Portuguese rendering of the Danish word "*privat-docent*." This title is adherent to the position I still hold as chief of the Ophthalmological Section of the Poliklinik in Copenhagen, and you will find my name in the list of *privat-docents* in the half-yearly catalogue of lectures from our university for a series of years. S. was cognisant of this, and the title now causing his indignation was used in advertising during weeks before he left. S. gives then a glowing picture of the great advantages under which he left me, but in reality he made a good bargain and his statements are not correct. Firstly, he often told me how during former holidays he got nothing from his private practice and how one of the *confrères* had kept the whole fee from some of his appointments. Secondly he leaves out that he got a third also of private practice outside his old patients (except eye diseases). When formerly I practising here under quite similar conditions took a holiday I neither from private practice nor from what appointments I held had one farthing; he at any rate got a third of "a good many hundreds of pounds." But these are minor details, showing, though, incorrectness of statements.

Which are, then, the very serious accusations S. brings against me from behind his screen of anonymity?

Briefly stated they amount to the following—that having consented to act as his locum-tenent on the understanding that as soon as he returned from England I would leave for Copenhagen I broke the compact firstly by remaining here, secondly by commencing practising on my own account, and thirdly by supplanting him in various directions among his patients. Of this last offence he professes to cite instances. In answer to the first charge I have to say that I told him in the presence of another gentleman that I did not know how long my stay would be—that I might remain ten years. At another interview I said in the most distinct manner that "in any case my acting as his locum-tenent would serve as an introduction to the public in case I decided to prolong my stay." As to the second, my return to Brazil after about ten years of absence was caused by the necessity of attending to matters connected with investments which I had made in Brazilian securities, and which, owing to the decline in exchange from 28 pence to less than sixpence per milreis, had brought me a loss of some 70 per cent. of their entire value, and I quite expected, and told S. as above stated of the fact, that I might be obliged to practise here again for a living. For the rest, I had, and still have, a substitute at the Poliklinik and my absence did not—and I never said that it did—depend on any such leave-extension as spoken of by S. When he speaks of "my chief argument" that I should not be his competitor after his return it is incorrect; the talk was about keeping the practice from being spread over several hands. I certainly was in my right to stay on and work, as I formerly did, in general practice an ophthalmological surgery provided due regard was taken to S.'s rights on his return. I understand my duties to be (1) to tell every patient who had been his and who was in treatment to return to him, and (2) to retire from his appointments. I did so. As an instance I cite that referred to in Letter I., copy herewith enclosed. Letter II. shows that I retired from an appointment though asked to keep it. But S. himself admitted to me that after his return I would be in my right to prescribe for people who formerly had been his patients.

I maintain further that I have proved so many incorrect statements in his letter (*every* negative of what passes without witnesses cannot be proved) that I am justified in asking for redress in some form or other from THE LANCET. Here in Saõ Paulo I need no defence, but I need it sorely in my home—and through THE LANCET. It is allowed to discuss medical ethics, it is allowed to use my behaviour as a base for such discussion, but either name for name or an anonymity that cannot be pierced. And is S. who cannot comply with the most elementary duty of a medical man, entitled to call on "some leading physician in Denmark" to give explanations about our rules and ethics?

I am, Sirs, yours faithfully,

G.

THE "VIAVI" SYSTEM.

To the Editors of THE LANCET.

SIRS,—The friends of a small boy, recently a resident patient of mine for epilepsy, have been attracted by the specious statements of the promoters of the "Viavi" treatment. This treatment purports to be "herbal" and emanates from a certain "Dr. Law, M.D." An individual calling herself "nurse" and decorating her name with the letters "C.C.L.L.H." styles herself the "representative" at Harrogate. Can you or any of the readers of THE LANCET kindly supply me with information as to the nature of the remedy or method of treatment?

I am, Sirs, yours faithfully,

Sept. 3rd, 1899. H. M. S.

*** The "Viavi" treatment is simply and solely quackery. We have not the least doubt that its promoters would profess to cure epilepsy or, indeed, any other disease, but judging by their advertisements they devote most attention to sexual troubles. We should advise "H. M. S." to tell his patient or his patient's friends to leave "Viavi" severely alone. *Truth* exposed the system some time ago.—ED. L.

A SINGLE KIDNEY.

To the Editors of THE LANCET.

SIRS,—I made a post-mortem examination to-day on the body of a man found dead. The cause of death was acute pneumonia. He had the right kidney *only*. Its form was normal; its length was six inches; its breadth was three inches; its thickness was two and a half inches; and its weight was 14 ounces. Are such cases common?

I am, Sirs, yours faithfully,

August 30th, 1899. ROBERT ALEX. JACKSON.

*** There are several varieties of single kidney:—1. In one form only one kidney is present, in its normal situation and of normal shape, but its size is greater than that of an ordinary kidney. This is a fairly rare abnormality and is the form met with by our correspondent. 2. The horseshoe kidney is more commonly found; in this form the kidneys are united by a broad band of kidney substance extending across in front of the aorta. 3. The third form is rare; in this the kidney forms an oval mass and is placed lower in the abdomen, or even in the pelvis, and in some instances attempts have been made to remove it as the operator has imagined it to be a pelvic tumour. A very interesting account of these and other abnormalities of the kidney is given in the Transactions of the Clinical Society of London, vol. xxxi., p. 118.—ED. L.

CAMPHORADINE.

To the Editors of THE LANCET.

SIRS,—Can you or any of your readers inform me what is the composition of "Camphoradine" and where it is obtainable? It is used with success in India in those cases where chlorodyne is indicated.

I am, Sirs, yours faithfully,

A. A. BRADBURNE.

The Hospital, Teignmouth, Sept. 4th, 1899.

AN EIGHTEENTH CENTURY NOMENCLATURE OF DISEASES.

UP to as late a date as 1750 the following nomenclature of diseases was employed by the Company of Parish Clerks in the Bills of Mortality which they published annually:—1. Abortive (illegible), infant and stillborn. 2. Aged. 3. Ague. N.B.—Joined in the Bills for some years with fevers. 4. Apoplexy, palsy, cramp, and suddenly. 5. Asthma and phthisic. N.B.—Joined in the Bills for some years with consumptions. 6. Chincough, cough, hooping-cough, and worms. 7. Child-bed and miscarriages. 8. Cholick, gripes, twisting of the guts, flux, vomiting, looseness, bloody flux, and bleeding.

9. Consumption, jaundice, diabetes, and falling sickness. 10. Convulsions. 11. Dropsy, tympany, stoppage in the stomach, rising of the lights and swelling. 12. King's evil, itch, leprosy, scurvy, St. Anthony's fire, scald head, imposthumes, sores and ulcers, cancer, canker, and fistula. 13. French pox. 14. Fevers, calentures, inflammations, sore throat, rash, and surfeits. 15. Gout, rheumatism, and sciatica. 16. Gravel, stone, and strangury. 17. Head-moldshot, horseshoe-head, watryhead, rickets, livergrown, bursten, and ruptures. 18. Lethargy, choak'd with fat, grief, lunatic, vapours, megrim, and spleen, headach, blasted, planet-struck, bedriden, gangreen, and mortification. 19. Measles, chicken-pox.—N.B. Joined in the Bills for some years with small-pox. 20. Plurisy. 21. Small-pox, purples, and spotted fever. 22. Teeth. 23. Thrush, quincy. 24. Casualties, bruised, burnt, drowned, executed, frighted, falls, and other accidents, self-murder, murdered, overlaid, poisoned, scalded, shot, strangled, smothered, starved, and suffocated.

"TABLOID" CASCARA.

To the Editors of THE LANCET.

SIRS,—Owing, no doubt, to a little obscurity in the letter we sent you the statement has been made that we are issuing "tabloid" cascara sagrada containing one and three grains of extract respectively instead of two grains as formerly. This is not actually the case, as the new "tabloid" preparations will be issued in addition to the old.

We are, Sirs, yours faithfully,

August 28th, 1899. BURROUGHS, WELLCOME, AND CO.

"GYNÆCOLOGICAL METHODS."

IN THE LANCET of August 26th there appeared a letter signed "L. G." asking for information as to certain gynæcological methods—namely, electrical illumination of the uterus and direct compression of the uterus through a laparotomy wound to check post-partum hæmorrhage. We are not aware that any satisfactory method of electric illumination of the interior of the uterus has been devised or described. The passage of the tube of a Kelly's endoscope into the cervical canal and the illumination of the cavity of the uterus by an electric light has been recommended and carried out, but gives results of little value. Abdominal hysterectomy in cases of post-partum hæmorrhage has been suggested as a mode of treatment but is condemned by Schauta and others. We know of no case in which the abdomen has been intentionally opened with a view to direct compression of the uterus. Such an operation would be quite feasible and no doubt efficacious, but would entail so much shock to a patient in danger of dying from post-partum hæmorrhage that it would hardly ever be justifiable.

LUNACY CERTIFICATES.

To the Editors of THE LANCET.

SIRS,—I should be glad of your opinion on the following. When on my holidays one of the party, my cousin's wife, developed melancholia and as she got much worse we took her home; there, having got two certificates, at half-past four on Friday the husband went to the magistrate's clerk and asked for a magistrate's signature, saying that the case was urgent. He was told that the case was not urgent according to the certificate (the certificate said that she had threatened violence to herself, her husband, and children) and that the magistrate would see the patient on the following day. At 1 P.M. on the following day (Saturday) the magistrate came with a clerk from the office. The clerk examined the patient (in a prisoner-at-the-bar style) for nearly 20 minutes; after the patient had left the room he remarked to me that he thought it was due to change of life. I told him that I did not think so at all. The magistrate then signed the certificate and left. The husband of the patient in a few days had an account from the magistrate's clerk for £1 1s. for expenses of the magistrate examining the patient. I am, Sirs, yours faithfully,

Sept. 4th, 1899. L.R.C.P.

*** According to the Lunacy Act of 1890 the magistrate in signing a reception order after seeing a patient is only doing a statutory duty and no fee is accorded by the Act. The custom is to take the patient to the magistrate. In the present case the magistrate might justly charge travelling expenses (cab fare), as he had to visit the patient.—ED. L.

POINTS OF ETIQUETTE.

To the Editors of THE LANCET.

SIRS,—There are two points in professional etiquette that I should like to know, viz.:—1. I was called in to see a patient (female) by the medical attendant at the express wish of the husband. I recommended a special line of treatment to be adopted, quite different from what had been previously done. Four days after that the husband came to me saying that as the medical attendant had not been near them since the day of the consultation would I attend. He wrote and dismissed the medical attendant before I went. Was I in order in taking the case over after having been in consultation? 2. A male patient called at my surgery to see me and went into a history of his complaint. He saw me two or three times at my house and once at present I have seen him at his own. He has only been under my care about ten days. During my visit to his house he informs me that he is receiving benefits from his club and that the medical officer to the club is the only man who can give him a certificate, the club not recognising the certificate of any other medical man. The club medical officer had seen the man a fortnight previously to my seeing him for the first time at my surgery, but then not professionally, only to grant the certificate, which had to be renewed every fortnight, he having been on his club some five or six weeks. The club medical officer has now written to me accusing me of unprofessional conduct. Is this also a breach of etiquette? Thanking you in anticipation,

I am, Sirs, yours faithfully,

August 30th, 1899. R. HENERY.

*** 1. It is obvious that only extreme circumstances justify a medical man in taking over a case in which he has been called into consultation by a professional brother. We should require to know more particulars of this case to feel sure that our correspondent was right in doing so. The only ground of justification we can see in his own narrative is that the practitioner in attendance had apparently withdrawn from the case. Nothing is said in explanation of this by our correspondent unless it be in the somewhat blunt way in which he explains his recommendation of a "quite different line of treatment" from that which had been followed. It is the duty of a consultant to urge any treatment that seems to him to be essential to the patient's welfare. It may, indeed, be proper entirely to reverse the treatment. But this would be an exceptional case. And even this can be done in most cases without offending or injuring the medical attendant. We recognise in all such cases the supreme right of the patient to be attended by whom she pleases or her husband pleases, but in the absence of more information in this case we are not able to congratulate our correspondent on having acted "in order" in taking it. 2. In this case our correspondent, when he found that the club medical officer was in attendance, should have required the patient to make clear to the club medical officer that his attendance so far had been in ignorance of the attendance of the medical officer of the club. And to render regular any further attendance he should have expressed a willingness to meet the club medical officer in consultation. It is not unusual for members of clubs to be attended by their own private practitioners. The practice is, in fact, one not to be discouraged, nor is there any necessary discourtesy in a private practitioner attending such patients. But if the club medical officer has been in previous attendance he should be treated with all due consideration.—ED. L.

Alpha.—Our correspondent's anxiety is natural without there being any reason to doubt the good faith of his partner. On a review of the whole of the facts we advise him to seek a frank discussion of the situation with his senior who could not reasonably object and probably would not. The mode of introduction seems to us inadequate, but it should have been agreed upon and fixed at the outset. To see practically no patients and not to have the benefit of a common plate seem to us fair grounds of complaint, though we know of similar instances and cases where reliance for introduction is placed on holiday opportunities, which are few and far between. If these matters can be arranged and both parties are pretty well satisfied with each other the partnership could go on. If not, a separation can be easily arranged without material harm to either side and, we think, should be.

W.—In mild cases of hammer-toe splints may be used. There are several patterns made; they contain metal springs which tend to press the toe back into the right position. They may be obtained at most instrument makers. In severe cases the surgeon has a choice of two operations: excision of the first interphalangeal joint and amputation. Excision gives a better looking foot, but the operation is more difficult, while amputation is easy. The toe may be removed either at the first interphalangeal joint or at the metatarso-phalangeal articulation; it matters very little at which joint the operation is done, but the latter is on the whole the method more frequently adopted.

Ireland.—1. There can be no harm in our correspondent looking after a practice under the circumstances he names. Of course, he must undertake full responsibility and should not pose as a "nominal assistant." 2. The proper style is simply Mr. —— and the address.

M. A. J.—A student can be registered at any time as commencing his medical studies if he produces evidence of having passed a preliminary examination and evidence from an official of a university or medical school that he has commenced medical study.

Multum in Parvo.—The announcement is to be regretted but we do not see any reason for thinking that the medical man in question was privy to his name being used in the manner mentioned.

Dr. H. J. Cooper.—We do not think that a member of a town council should receive payment from his corporation. Therefore it would be best for the post of lecturer to be given up.

Mr. A. Rawlings.—We are making inquiries on the subject.

CORRIGENDUM.—At p. 655 of THE LANCET of Sept. 2nd (Students' Number) the name of Mr. Sydney Stephenson should have been given as ophthalmic surgeon to the Evelina Hospital for Sick Children.

During the week marked copies of the following newspapers have been received: *Hertfordshire Mercury, Scotsman, Leeds Mercury, Surrey Advertiser, Herts Advertiser and St. Albans Times, Wigan Observer, Folkestone Express, Local Government Journal, Portadown News, Local Government Chronicle, Australasian Medical*

Gazette, Newry Telegraph, Times of India, Pioneer Mail, Architect, Yorkshire Post, Municipal Journal, Bristol Mercury, Evesham Journal, Sanitary Record, City Press, Liverpool Daily Post, Sheffield Daily Telegraph, Eastern Morning News, Dundee Courier, South Wales Daily News, East Anglian Times, Citizen, Umpire, Western Mail, Morning Herald, Nottingham Guardian, Yorkshire Herald, Newcastle Chronicle, Church Times, Warehouseman and Draper, Ayrshire Evening Post, Morning Leader, Malvern Advertiser, Enfield Chronicle, Glasgow Evening News, Oban Times, Rhyl Journal, Public Health, Middlesex County Times, Weekly Free Press and Aberdeen Herald, Central Somerset Gazette, Swansea Journal, Norfolk Chronicle, Manchester Weekly Times, Life, Cambrian, Acton Gazette, Southampton Times, Hampshire Independent, Birmingham Argus, Trowbridge Chronicle, Western Mercury, &c., &c.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 7th, 1899.

Date.		Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb	Remarks at 8.30 A.M.
Sept.	1	29·70	W.	0·36	121	76	56	61	62	Cloudy
"	2	29·71	W.	0·04	122	75	58	59	62	Cloudy
"	3	30·03	S.W.	0·10	116	78	53	60	60	Cloudy
"	4	30·07	S.E.	...	121	82	58	61	65	Hazy
"	5	29·88	S.E.	...	127	89	64	65	69	Overcast
"	6	29·92	E.	...	108	80	60	65	70	Hazy
"	7	29·92	E.	1·09	72	66	65	65	66	Overcast

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (13th).—St. Bartholomew's (1.30 P.M.), University College, (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (14th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (16th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 P.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

TUESDAY (12th).—WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.).—4 P.M. Dr. F. Beach: Mental Defects in Childhood.

FRIDAY (15th).—WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.).—4 P.M. Dr. D. Grant: Cases of Disorders of the Ear, Nose, and Throat in Relation to Diseases of the Nervous System.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1899, which was completed with the issue of June 24th, and the Title-page to the Volume, were given in THE LANCET of July 1st.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1899 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

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